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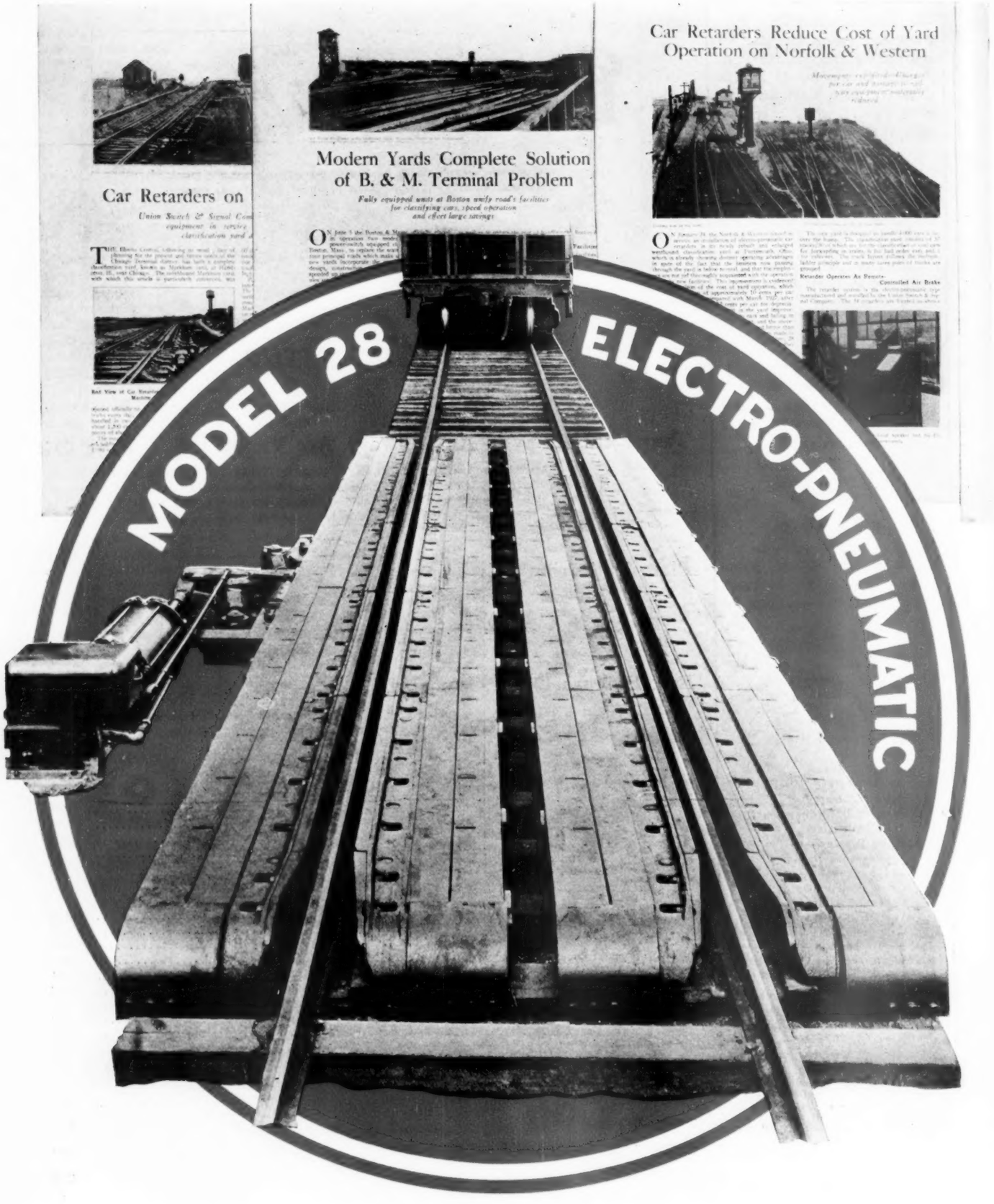
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Railway Age

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The Myth of "Over-Production"

THE present period of depression, like the preceding period of prosperity, is marked by the use of numerous misleading catchwords. During the period of prosperity we had the "new economics," as a result of which, business cycles had been abolished, and prosperity and high prices of stocks were to be eternal. Now we are being regaled especially with "over-production" as the cause of our economic troubles. The industries of the country, we are told, have been expanded until they can produce more than the people want to buy. The lack of adequate demand for their products has thrown millions of men out of employment. Therefore, we must reduce working hours to five or six a day in order to divide up employment enough to make it go around.

It may or may not be desirable for working hours in industry to be reduced. Regardless of that, the prevalent talk about "over-production" is as misleading as was the recent talk about why prices of stocks had gone so high and could never come down again. Undoubtedly there has been real over-production of some commodities, for example, wheat and certain other farm products. In a country where the average income has become as large as here, it is quite possible that practically all the people are able to buy all of some foodstuffs that they want, and if more of these are produced, there actually is "over-production" of them. But to attribute present conditions to general over-production of commodities is folly, as will immediately be perceived by anybody who will look about him and consider the conditions that actually have existed, not only during the depression, but in preceding years of prosperity.

National Income and "Over-Production"

The total income of the American people in 1929 probably was about 90 billion dollars, or approximately $720 per capita, and it will be less this year. There are some people whose incomes have a purchasing power that enables them to buy all the things that are good for them or even that they want; but the mere citation of the fact that the average income per capita in a year of prosperity was only about $720 is sufficient to demonstrate that an overwhelming majority of the people do not and cannot buy all they want or all that would be good for them. Obviously, if this large majority had a larger purchasing power they would buy more things, and if their purchasing power were enough larger they would present an effective demand for commodities enormously exceeding the present productive capacity of most of our industries.

People with relatively large purchasing power provide themselves with large, well equipped, and beautiful homes. Would not others do so if their purchasing power were large enough? Persons with large purchasing power usually buy more clothes than those with small incomes. Would not others do likewise if their purchasing power were larger? Why, then, are many of our industries shut down or producing far below their capacity, our railways threatened with disaster because of inadequate traffic, and literally millions of men in our industrial districts out of work?

These conditions are mainly due, of course, to economic maladjustments owing to which millions of persons on our farms, and in our towns and cities, who should afford an American market for all and more than all the goods American industries can produce, have not enough purchasing power to buy those goods. One of the most foolish things constantly said about the present situation is that it exists because people do not want to buy more. Most people do want to buy more. They do not buy more because the incomes of some of them are not large enough, while others are afraid to spend their incomes lest there shall come a "rainy day" when they will need savings. In both classes of cases the true reason why they do not spend more is that their incomes and purchasing power are small. It is not so much unwillingness to spend, as fear to spend, that causes deposits in savings banks to increase during depressions.

There is much discussion of the problem of unemployment, and many means are being suggested for solving it. Whether reduction of hours of work is desirable or not, it will not long solve the problem of unemployment, or the problem of so-called "over-production" that is assumed to have given rise to it.

As long as a large majority of the people do not have comforts and luxuries that approach in amount and quality those now enjoyed by a small minority of the people, the great problem of economic statesmanship will be to provide this large majority of the people with a greater purchasing power that will very effectually prevent "over-production" and unemployment.

Why the Inadequate Purchasing Power?

To show what the real problem is, is not to solve it, but it will certainly be better to study and attack the real problem than to overlook it and adopt measures which may hinder its solution. In what way or ways can the purchasing power of the great majority of the American people be increased? Attempts are now being made to give partial concrete answers to this question by speeding and enlarging various kinds of private and public expenditures to reduce unemployment. Unfortunately, while these measures may be temporarily helpful in a period of depression, they do not afford any solution of the problem of permanently and more rapidly enlarging the purchasing power of the great majority of the people. Probably the first step that should be taken toward finding a real solution of that problem would be to ascertain what large class or classes have had no increase in their purchasing power within recent years commensurate with the increases that have been enjoyed by other classes. Such investigation probably would show that the largest class which has had a comparative reduction in its purchasing power is our huge farming population and the business concerns and persons in rural regions that are chiefly dependent upon the farmers for their prosperity, and that this is the principal cause of the so-called "over-production" in our industries. There is strong reason for suspecting that the prosperity which the people of our industrial regions have enjoyed within recent years has been more or less artificial; that it has been largely due to such questionable expedients as installment buying; that in large measure the people in these regions have been "getting rich by taking in each other's washing," and that for more real and permanent national prosperity we must look largely to increasing the purchasing power of the rural population.

Why has the purchasing power of the rural population been relatively or actually impaired? Principally because the prices it has had to pay have increased more than the prices it has been paid, and because the burden of taxes it has had to bear has been enormously increased. Demagogues in rural territory sometimes attribute it to railway freight rates. Freight rates on farm products have increased relatively less than the prices of most of the things the farmer has to buy; they have increased nowhere near as much in proportion or in actual amount as his taxes; and, anyway, his cost of freight transportation is relatively so small a part of his total costs that changes in it alone would affect his total purchasing power only in small measure. Attention is called to the farm situation as only one illustration, but a very important one, of conditions that, by making inadequate the purchasing power of large classes, create the real unemployment and the more or less fictitious "over-production" in our industries.

A Problem for Business Statesmanship

Nothing could be more dangerous than to have the government undertake directly to solve the problem of increasing the purchasing power of large classes of the people. The Farm Relief act seems to have accomplished nothing as yet except to injure private business and increase taxes. Politicians think of the political rather than the economic effects of the solutions they propose, and the almost inevitable result of their endeavors is to make conditions worse. Is there not enough statesmanship among the business leaders of the country to envisage and attack this problem? Or are our business leaders so preoccupied with their efforts to enable their own concerns to take business from competitors in their own industries, and to enable their own industries to gain advantages over other industries, that they have no time, energy and ability left to devote to solving the great and paramount problem of enlarging the American market for American products? The group that should be best able to devote itself to a study of this great problem that would be scientific and uninfluenced by selfish considerations is the professional economists in our universities. They, at least, would approach the subject without any misleading preconceptions regarding "over-production."

The nation needs more production of most things and a more rapid increase of it. It needs more production to provide more business for industries and railways, more employment for labor, and more comforts and luxuries for the great majority of the people; but there cannot be the needed increase in production without a larger effective demand for products, and the problem of creating a larger effective demand can be solved only by increasing the people's purchasing power.

During the time when the nation apparently was constantly growing more prosperous and the stock market was rapidly advancing, it would have been impossible to have got business leaders to heed a suggestion that thorough study should be given to this problem. The severe and prolonged depression which has occurred, and which has resulted in such large reductions of profits to capital and so much unemployment to labor, should stimulate business leaders to take a broader view. Perhaps the best way of bringing about study of the great problem of enlarging the American market for American products would be to have the study provided for by the Chamber of Commerce of the United States and delegated to a very carefully selected group of the most eminent economists in the country. It is a reflection upon and menace to our present economic system to have such conditions exist as do now exist in the United States, and the large business interests of the country should for their own protection endeavor to find some means of preventing their recurrence.

Why Increase Suburban Rates?

THE New York Central last week announced its intention of raising its monthly commutation rates in the New York suburban zone by 40 per cent, thereby putting its fares on a par with those of the New York, New Haven & Hartford, which serves a comparable territory to the north of the metropolis. An increase of 25 per cent in commutation rates by the Delaware, Lackawanna & Western announced for November 1, as a means of recompensing it in part for its electrification program now nearing completion, is under suspension by the Interstate Commerce Commission and hearings will be held on the proposal. Increase in the prices of anything at the present time departs sufficiently from the usual to attract attention, and these proposals have certainly done that.

The merits of the case of these two railroads for rate increases seem obvious—in spite of the not unnatural popular opposition to such a step—and at the proper time and place they should be able to justify the new rate bases which they propose. Commutation traffic has been notoriously unremunerative, and particularly so since automotive transportation has taken such a large percentage of the business moving at the full rate, leaving the railroads all the low-rate business. The states of New York and New Jersey, at the expense of the taxpayers, have been building arterial highways which are no sooner built than they are immediately congested by buses and trucks, the taxation of which is trivial compared with the cost of the facilities which they enjoy. The taxpayers of both states built the Holland vehicular tunnels under the Hudson river. It is true that tolls are charged for the use of this improvement—unlike most highway facilities. These tolls, however, are so based that the charge per passenger-seat is about three times as high for the average private automobile as it is for a bus.

The railroads are faced on every hand with the loss of remunerative traffic to competitors which have the roadway upon which they operate provided at public expense, whereas they have to provide their own roadway, maintain it and pay taxes which, on the average, are upon a higher basis than those of their competitors who get their roadway free. The railways have to pay their employees, maintain their properties and pay taxes and interest. If, as has been the case, an important part of their traffic is drained away by subsidized competition, then the traffic remaining will have to yield higher rates if railways are to continue to operate.

Persons or industries which are in any degree dependent upon rail transportation, therefore, have a definite self-interest to serve in exerting their influence to see that the artificial defection of railway traffic by highway vehicles which do not pay full rental value for the use of the highways is stopped, either by relieving the railways of some of their tax burdens or by an adequate plan of taxation for those who use the highways for profit.

If the state governments of New York and New Jersey would do for the railways what they have done for commercial highway vehicles—indemnify them for the cost of their roadway and structures and undertake their maintenance at public expense—then it would not be necessary for the railways to apply for rate increases. Instead, in all probability, they could very profitably put rates into effect which would defy most highway competition. Until some steps are taken, however, to place the various forms of transportation on an equitable economic basis—either by reducing regulatory and tax burdens on the railways or by increasing them on commercial highway vehicles—just so long will railway traffic have to be expected to bear its full share of the costs of providing the service.

The Train Control Situation

IN certain quarters it has been assumed that automatic train control is no longer a live issue, since the Interstate Commerce Commission stated in substance in a report issued in November, 1928, that the carriers would be relieved from further installations of train control by order at that time. However, in impromptu discussion at the recent convention of the Signal Section, A.R.A., the assistant director of the Bureau of Safety of the I.C.C. referred to several phases of the situation that are perhaps being overlooked. Although he explained that he was expressing personal views only, the fact that the stenographic report was checked and approved by one of the commissioners for general distribution and inclusion in the proceedings of the Signal Section, gives these remarks much of the status of a statement of the train control situation as viewed by the governmental authorities.

The first important statement of the speaker was that train control has justified itself, this opinion being based on the fact that, with 9,000 locomotives and 21,000 miles of road equipped during the last four to six years, not a single disastrous collision has occurred on train control equipped territory. Continuing he said, "The Commission has not changed its attitude in the slightest degree in respect to the desirability of automatic train control, but stands just as ready today to issue an order requiring train control as it did six or eight years ago. I do not mean to imply that the Commission is now considering any general train control order. But, if convinced that train control was needed on a particular section of track and the railroad company evidenced no indication of making such an installation on its own initiative, I believe that an order would be forthcoming without delay."

Following the mention of cab signaling without automatic train control as a possible alternative, the speaker stated that "The original orders of the Commission provide certain alternatives, permitting automatic train stop and speed control. The Commission has also encouraged the development and installation of cab signals, considerable work being done along that line and in due course the question of whether cab signals will be recognized as an additional alternative, along

with automatic stops and automatic speed control, will be formally considered by the Commission."

The fact is that the stage is set for the Commission to require the railroads to provide additional protection wherever it becomes evident from an accident that the existing methods of operation are not safe. Any railroad can forestall such an order, in so far as it is concerned, by taking measures to prevent accidents. A recent head-on collision on a busy single-track section of a prominent railroad, by reason of the fact that an operator neglected to deliver a train order, is typical of cases that might call forth an order. The installation of automatic block signals, is, without doubt, the most logical means of preventing further accidents under such circumstances and such action was recommended in the last order of the Commission, which stated in part that "the carriers would be relieved from further installations of train control by order at this time, but (the Commission) would expect the railroads to use their own judgment in installing signals where required."

Likewise, attention should also be called to the further warning in the order to the effect that "in block signal territory additional protection should be provided where required." As the situation now stands, this requirement may possibly be met by train control or perhaps by cab signaling. At any event the talk at the signal convention was more than a few idle remarks and should serve as a reminder of the last order, as well as a warning that train control is not a dead issue.

Is Our Highway Policy Wise?

PRACTICALLY all the states are pursuing active plans of highway construction and have been for several years. But just how much remains to be done and how wise have the construction policies been? New York State, being very populous, was one of the earliest to improve its roads and the assumption that even motorists who know the state would make would be that nearly all its roads are permanent. But what are the facts? In a recent study of rural decline prepared for the New York State Tax Commission appears the following:

> As far as the more populated districts are concerned New York will be well supplied with highways when the present plans are completed. Nevertheless, the highway situation is really the most serious economic problem of government at the present time from the point of view of the farmers. It makes little difference to the farmer whether his farm lies one mile or a hundred miles from a concrete highway or a railroad or waterway as long as the intervening road is impassable. For this reason a general picture of highway facilities tells very little..... Farmers of New York are better supplied with roads than are those of the majority of other states..... however, over half of them are living on mud roads; and where the rainy season is fairly long this means virtual economic isolation for a large part of the year, and signifies the existence of a serious rural transportation problem.

In other words the millions which the people of New York State have spent for highways have largely gone into improving constantly the connections between populous centers. The highway is the only agency which can provide localized transportation. Communication between populous centers is available by railway. Is it not a strange policy which directs primarily the expenditure of millions for the constant development of highways for high-speed, long-distance transportation while utterly neglecting the primary function of the highways, which is to give efficient local, individualized transportation?

Logically, it would seem that a wise highway policy would first provide *some kind* of permanent surface on all its highways—and reserve the development of curveless, graded hard surface thoroughfares between centers of population until this primary and necessary task had been completed. Actually, however, and particularly in some of the states which have started to improve their highways but recently, the extreme opposite position has been taken. We have in mind one state endowed with particularly rich soil which a little rain turns into the deepest, stickiest mud imaginable. Dirt highways in this state are impassable to automotive vehicles for weeks, and sometimes even months, in the year. This state embarked upon a highway program a few years ago. Did it proceed to put a gravel surface on all its highways, so that all its rural population might benefit. It did not. Instead millions have been sunk in laying out and building model high speed heavy traffic arteries between centers of population only to have them immediately congested by high speed motor coaches and trucks. Yet residents of these populous centers already had adequate transportation by reason of railroad service which the rural population did not have and which it does not have today. The provision of localized transportation into all rural areas, the function of the highway which it alone possesses, has been completely forgotten and the vast majority of farmers who do not happen to live along one of these, necessarily few, speedways are as bad off as ever. Worse off in fact—since they must now compete with the farmers fortunate enough to be located on improved highways.

The building of these great modern roads certainly augments some adjacent land values but often at the expense of actually depressing values of remote farms. There has been a great deal of talk about the highway and the motor car and how they have improved the lot of the farmer. That they have done this for some farmers is undoubtedly true. That they have done the same for all, or even a majority, seems gravely doubtful. The fact remains that it is precisely in our older communities where road building has been greatest that rural decline is most severe, and that such decline has come primarily to those areas overlooked by highway authorities of necessity by reason of limited funds and their zeal to make what highways they do build into everlasting Roman roads.

If the farmers in the states which are just beginning to improve their roads could see what has happened in some of the older communities, perhaps they would insist on a more equable distribution of highway funds —disbursing them evenly on all highways instead of concentrating them so heavily on a favored few.

Taxpayers, As Well As Railways, Are Victimized*

Pay not only for waterway construction but to subsidize barge operation—Highway carriers undercharged for use of costly roadways

By Daniel Willard

President, Baltimore & Ohio

FROM that beginning of American railways when construction of the Baltimore & Ohio was started on July 4, 1828, a system of railroads nation wide has developed, with an aggregate length of main track of over 250,000 miles, representing an investment of not less than 26 billion dollars; performing a freight service each year equivalent to the moving of 3,700 tons of freight one mile for each man, woman and child constituting our population, and a passenger service equal to transporting each one of our present population 250 miles a year. In the performance of this duty the services of more than 1,500,000 men and women are availed of, 54,000 passenger cars are owned and used, 63,000 locomotives are owned and used, and 2,300,000 freight cars are owned but not all used, I am sorry to say, at the present time.

This system of railroads, while built up with private capital and under private management, subject of course to governmental regulation, has been so co-ordinated and interwoven that it is possible for a man located at any railroad station in any state in the union to load and send a carload of freight to any other station on a railroad in any other state in the union, and I may add, it is also possible to ship to any station on any railroad in Canada, and in large degree the same is true of Mexico.

Over Three Billions for Wages and Taxes

The railroads as a whole pay taxes in the aggregate amounting to about $400,000,000 a year. Their combined payroll amounts to $2,750,000,000 a year. Their combined payments for interest on their mortgage indebtedness amount to $600,000,000 annually, and in 1929 they paid $505,000,000 in the shape of dividends to the 825,000 persons who own the outstanding railroad shares. All of this I have mentioned in order to give a brief idea of the magnitude and scope of the enterprise.

You may now say, "Well, granting that all you have said is true, what about it?" There is this about it, among other things. During the 30 years preceding 1920 the freight business of the railroads in the United States increased between 60 and 80 percent each decade, but during the year 1929 the increase was about 8 percent, and in the region north of the Potomac and east of the Mississippi river there has been scarcely any increase at all. During the 30 years preceding 1920 the passenger business of the railroads represented in terms of passenger miles traveled, increased even more than the freight business, but during the last 10 years just elapsed the passenger business, expressed in the same terms of passenger miles, has decreased over 34 percent. These figures are in large part from the official reports filed with the Interstate Commerce Commission, but are partly based on estimates which I believe to be substantially correct.

Traffic Growth, Formerly Big Aid, No Longer Exists

Now, what significance should be attached to the figures which I have just given? In the answer to that question is embodied the real essence of the railroad problem at the present time, and seemingly we have always had a railroad problem of some kind even when conditions and business outlook appeared more encouraging than at the present moment. In the past, because of the constant growth of our country and the development of its commerce, railway managers were always confronted with the problem of obtaining each year a large sum of money with which to purchase additional equipment and to provide additional facilities necessary, or believed to be necessary, to take care of the constantly increasing business which they expected to be called upon to handle. Because of that fact if it was found necessary at times to make substantial wage increases or to accept substantial rate reductions, we were in the habit of thinking—oh well, this is going to pinch us some at the moment, but the increased business which is certain to come to us in the next year or two will enable us to take care of the increased payments or reduced rates and still leave a fair margin for our shareholders. That particular condition no longer exists, as I have just shown.

One may well ask what has brought about this change which I have been discussing. Why is it that apparently the business of the railroads has ceased to grow, or at least is growing at a very greatly reduced rate? There are a number of causes which have contributed to bring this about. Twenty years ago practically all freight traffic, representing the commerce of the United States, was handled either by the railroads or by vessels on the Great Lakes, and of the aggregate amount so handled, probably not less than 90 percent was handled by the railroads, due in part to the fact that the Great Lakes are frozen over and not available as transportation agencies during several months of the year. Within the last 20 years a number of other potential agencies of transportation have become actual agencies of transportation, in competition with the railroads.

Railroads Still Carry 75 Per Cent of Traffic

The latest figures which I have been able to obtain in this connection, partly estimates, show that the total traffic movement reported in the United States for the year 1929 was equal to the carrying of 600 billion tons one mile. Of this aggregate the railroads carried roundly only 75 percent of the whole, instead of 90 percent of

* An abstract of an address delivered at a meeting of the Washington, D. C., Board of Trade, November 4, 1930.

the total, as was the case 20 years before. This difference, I suppose, may be assumed to reflect, among other things, the increasing use of the pipe lines, rivers and canals, and of the motor truck on hard surfaced highways.

Other factors have also operated to reduce the business seeking movement over the railroads, as, for instance, the development of hydro-electric power, which takes the place of coal formerly carried by the railroads, and the development of electricity at the mine mouth, which can be carried over copper wires to places where used. This latter, of course, reduces the volume of coal which otherwise would move over the railroads.

Again you may say—"Granting all that you have said is true, what about it?" Are not the people of this country entitled to use the best and most efficient agencies of transportation available? Have they not the right to make use of undeveloped water power? In short, may they not follow any course that is economically advisable, regardless of the effect which it may have upon the railroads?" To that question I must answer yes, the people of this country are entitled to have and use the best and most efficient agencies of transportation that may be afforded them. Generally speaking they are not under any particular obligation to the railroads, but more specifically speaking they are under a certain obligation to the railroads because they have assumed to regulate them in the public interest, and having assumed that responsibility, it seems to me they must also accept the obligation which goes with it to see that the railroads are treated fairly, which is also really in the public interest.

In times past the railroads, or some of them, did things which were disapproved, and legislation was passed to prevent such abuses in the future. Because of those conditions a certain feeling of antagonism toward the railroads grew up, and seemingly it came to be believed by many that the railroads were not entitled to be treated with the same standard of fairness that was accorded to everyone else. I am not saying that there was not much to justify such a belief, but as time went on, as the practices complained of were corrected, as the problem confronting the railroads became better understood, and as the people began to realize how very intimately their best interests were bound up with the best interests of the railroads, this feeling changed, and I do not think it can now be said that there is any general sentiment of hostility in this country against the railroads. Certainly it is true that never before have the people of this country had better service from the railroads than they have been receiving during the last three to five years, and are receiving today.

Taxpayers Bear Building Costs of Waterways and Boat Operation Too

Nevertheless, there are still some phases of the problem which have not been finally adjusted. We may well question the propriety of government investments, of money that has been raised by taxation from all the people, in facilities for carrying freight upon the inland waterways in competition with the railroads at rates that are in no correct sense remunerative: Personally I do not think the government is called upon, or that it ought to enter into the subsidized operation of boat lines for the carrying of freight that can be and otherwise would be economically moved by the railroads. I recognize that much may be said in support of a policy whereunder the government will spend money raised by taxation for deepening and improving the rivers so that they can be made navigable, but, having done that and then having made such facilities available for service practically free of cost, if private capital cannot or will not operate boat lines on such waters on a basis to justify private investment, then I submit that such operation by the government is economically unsound and cannot be defended from any fair and reasonable standpoint and ought not to be continued.

I not only have no objection to, but am heartily in favor of the liberal policy which our government has pursued for the last 15 or 20 years in the way of improving the highways. I am glad to know that out of our total of 3,500,000 miles of highway in the United States, between 500,000 and 600,000 have been so improved as to make them suitable for the operation of automobiles and trucks. I think the highways should be free for the private use of all individuals—free with the exception of such charges as may be necessary for police purposes and may be collected in the shape of a license or gasoline tax. I am opposed, however, because I think it is unfair, to the unregulated use of such government-built facilities without charge by individuals or corporations engaged as common carriers, in competition with the government regulated railroads. I have said that the railroads in the United States today have cost not less than 26 billion dollars, and probably one-half of that amount has been spent for building the tracks and structures on which trains are run.

Railroads Spend 14 Per Cent of Gross to Maintain Their Highway, Buses Get Theirs Free

Furthermore, out of every dollar earned by the railroads not less than 12 cents is spent for maintaining such tracks and structures. In very large measure those who carry on the business of a common carrier over our improved highways are relieved from such capital and maintenance charges, and to that extent their competition is unfair to the railroads. The same thing, of course, applies to the operation of motor buses carrying passengers on improved highways.

I make no complaint whatever against the development of these improved agencies of transportation. If the railroad cannot compete successfully with other agencies, then it may be that like the ox cart and the Conestoga wagon, the railroad will have to give way to something more modern and more efficient, but I have no fear whatever concerning the ability of the railroad to continue to perform an increasing transportation service, regardless of any agency which has so far come upon the scene, provided the conditions surrounding the contest are fair and the terms equitable to all concerned.

There are certain kinds of traffic which, because of the character and the distances hauled, can be more economically and satisfactorily handled by the motor truck or motor bus. Such traffic has left or will leave the railroads permanently, but there will still remain the large bulk of heavy commodities needed for the carrying on of the commerce of this country, which will continue to move over the railroads. On the Potomac division of the Baltimore & Ohio 5,000 tons of coal are handled in one train manned by an engineer, fireman, conductor and two brakemen, five in all. To handle the same volume of freight by motor truck upon the highway would require a thousand separate trucks carrying five tons each, which is the limit imposed upon many of the highways, with at least a thousand men to drive them. There can be no question as to the relative economy of rail transportation and highway transportation under such conditions.

(Continued on page 994)

Plain Talk from a Switchman

Railway employees realize seriousness of situation and will lend their aid for the asking

By Dana Mavity

MR. Woodlock's article in the *Railway Age* of October 25, "Unite and Fight," contains food for thought that should not be overlooked by a single railway executive in this country.

In the same issue, under the heading "Railway Employment," you state that it is remarkable that railway employees have not offered national resistance to the various things that are seeking to destroy the earning power of the railways and are reducing the earning power of the employees. It is remarkable that there has not been a resistance, not only on the employees' part, but on the part of the executives as well.

Duty of Initiative Rests on Executives

I, as a railway employee, a switchman with thirteen years' experience, feel that the greater part of the blame should rest upon the shoulders of the presidents and chairmen of the boards of the various railroads in this country for their lack of courage to fight back.

No country in the world is worth living in that is not worth fighting for, and I feel that any railroad that will not fight to better its position and the position of its employees is not worth helping or working for.

We are fast reaching a position where we must unite and fight, or slip back into a dark and dismal oblivion and watch thieves that steal in the night take the bulk of our business from us.

Is there no resistance or fighting spirit left in the men who operate the railways today? Are they yellow and quitters in the face of the greatest fight of them all, that is fast approaching? Will they stand idly by and watch the inland waterways and various truck lines steal the bulk of their traffic? Where are the various stockholders, the men who own millions of dollars of railway stock? Why have they not forced the executives to make a fight?

There is a way out. We, the employees, are, I believe, the greatest political power in this country. At the present time, I feel that we have a voting strength of between four and five million votes. By that I mean railway employees and their families.

The railroads can have this voting strength for the asking.

Let Railways Form Committee, Invite Unions

Our position, as employees, is becoming desperate as each year more of us are cut off. If the railway executives will form a committee, that committee to act for all the railways and invite the leaders of the various labor unions of the railways to meet with them and form a plan of procedure, they can then proceed to Washington, united in their demands.

Political leaders in Washington will listen to men who have between four and five million votes at their command.

I feel if the railway executives will get in touch with the president of the Switchman's Union of North America, he will help bring the heads of the various railway labor unions together, to meet with them and help form a policy to protect each other. As Mr. Woodlock says, we need an Albert Fink, and if we get together, who knows but that a man may come out of this meeting, that will be far greater than Albert Fink and lead us to victory in this fight.

We cannot go through this coming war divided. We must unite or lose. We must forget the past differences between management and labor. We are so closely interwoven that the destruction of one means the death of the other. We must have unity in this fight or we will both go down to an economic death.

Railway labor unions must help or they will be destroyed, their ranks will be so reduced by their men losing their positions, caused by the railways losing traffic to waterways and truck lines, that I cannot see how they can help from coming into this fight on a national basis.

Unions Losing Millions in Dues

Just a short study in plain numbers presents a problem that is not hard for the average man to understand —318,000 less employees in 1930 than in 1923. Put this on a union due-paying basis of four dollars per month and the railway unions have lost an income of $1,272,000 in one month, and over a period of one year, they have lost $15,264,000. It should be easily seen by the slowest thinking employee, that as the railways lose traffic, we lost our jobs and our unions have their incomes reduced. While our incomes are reduced, think of the enormous loss the railways are suffering each month, and loss of income means less dividends. For the stockholders to remain dormant, is a mystery to me.

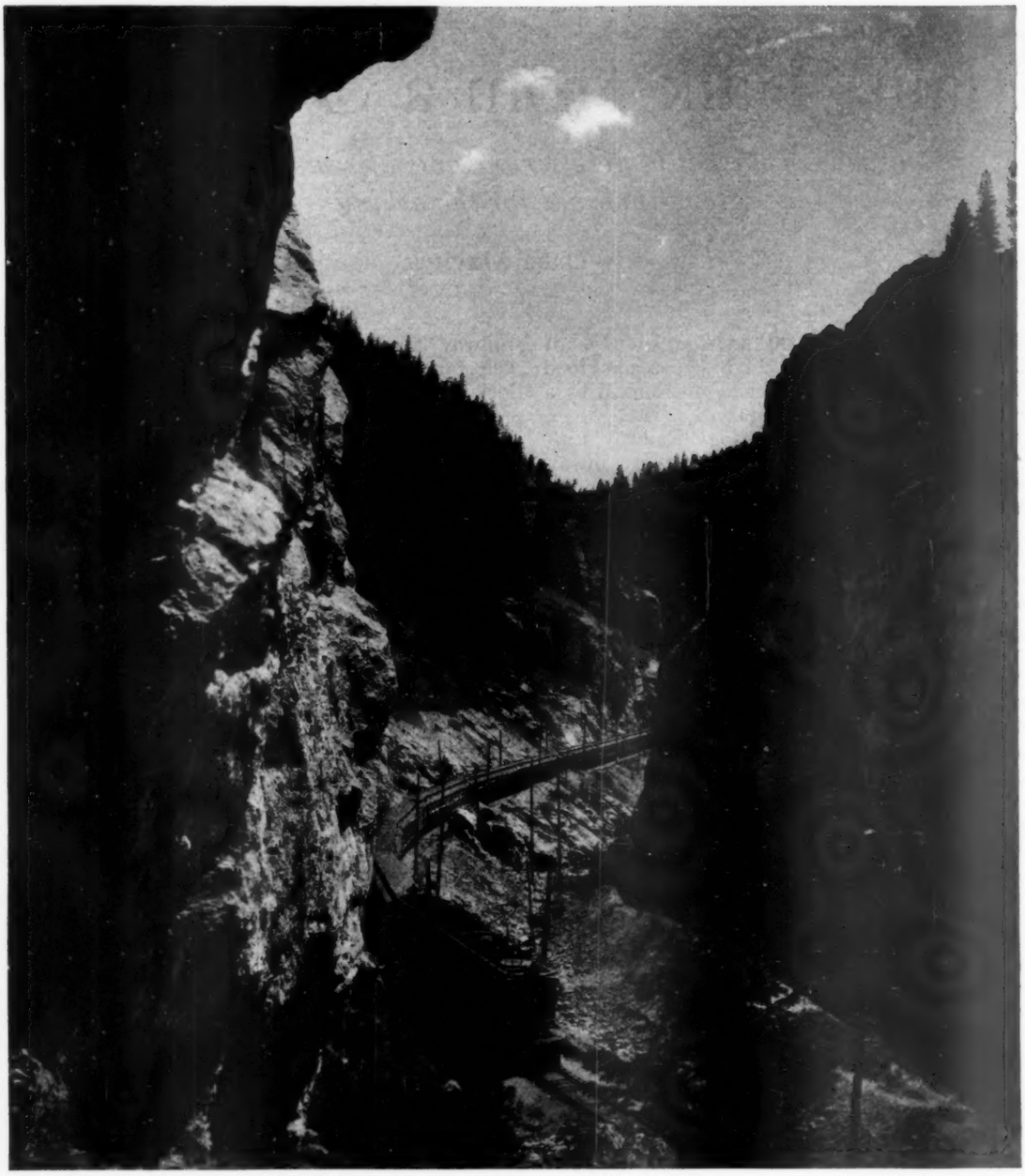
I cannot see any other way out, but unite in this death struggle, and fight our opponents, not each other. We have too much to lose by not helping each other. If the railways lose, it means our death. It is better to fight and lose, than not to make a fight at all. Men feel better who have made an honest fight, even if they lose.

Everyone knows that union labor will fight, for if they did not, they would not be here today.

Executives Know How to Fight

Railway executives know how to fight, for the most of them have come up from the humbler walks of railroad life. They know what it is to battle to get a tonnage train over a division at night when it is thirty degrees below zero; know what it is to keep things moving in a highly congested train yard, under the same conditions; and all of us in this game know that it requires courage. I know this because I have been doing it for the past ten years.

Such men as Daniel Willard of the B. & O., J. E. Gorman of the Rock Island, J. M. Kurn of the Frisco, and many other executives have come up through the ranks. Won't they make an effort to bring the railway executives together or must we journey through the valley of the shadow of economic death separately?



C., M., St. P. & P. Train in a Montana Canyon

N. E. L. A. Electrification Report

A study of installations on western railroads has developed much useful information concerning operation and maintenance

THE annual report of the Electrification of Steam Railroads Committee, National Electric Light Association, is an important contribution to the information available on this subject. The committee, which is composed of 11 representatives of steam railroads, 12 from power companies, 3 from electrical manufacturers, 3 consulting engineers, and a full-time secretary and staff, is concerned with the mutuality of interest between the railway and power industries in all projects for electrification of steam railroads.

A program which will require several years for completion has been laid out as follows: 1—To study

railroad electrification in a general way, avoiding technical details. 2—To analyze railroad electrifications already made and to develop the fundamental reasons for, and the results of, these electrifications. 3—To promote cooperation between the executives of railway and power companies in order to develop a clearer understanding of each others problems and requirements in connection with railroad electrification.

The committee does not attempt to enter the technical fields of railroad engineering and operation. The report includes 72 pages and is well illustrated. It includes notes on recent progress in electrification and tabular data covering existing installations, considers forms of power contracts and covers an extensive study of the electrification of western railroads.

Recent Progress of Electrification

Under the title "Recent Progress of Electrification" is included a short paragraph for each railroad in the United States and for each foreign country in which there has been activity during the past year. Twelve American railroads and 22 foreign countries are included.

Tables give the location, scope, type, reasons and results of electrification all over the world. These tables include the name of the railroad, its location, electric mileage, system installed, year electrified, traffic affected, reasons for electrification, results of electrification and numerous physical characteristics of operation.

Form of Contract

The sub-committee on Form of Contract reports on new contracts negotiated in 1929 and 1930 covering power supply for operation of railroads, and also on the power consumption per mile electrified. Data collected by this committee shows the energy per mile of route to vary from 70,000 to 9,674,000 kw. hr., with an average of 865,000 kw. hr. The energy per mile of track varies from 63,000 to 1,178,000 kw. hr., with an average of 360,000 kw. hr. The load factors of the electrified sections which have submitted complete statistics vary between the limits of 14 and 32 per cent. Preliminary estimates for proposed extensive electrifications on heavy main line railroads in the vicinity of cities where there is considerable all-night business provided by both freight and passenger services, indicate that these electrifications may develop load factors as high as 60 to 65 per cent. A table shows that out of 21 railroads having some electrification, 4 generate their own power, 14 purchase power and 3 use both generated and purchased power.

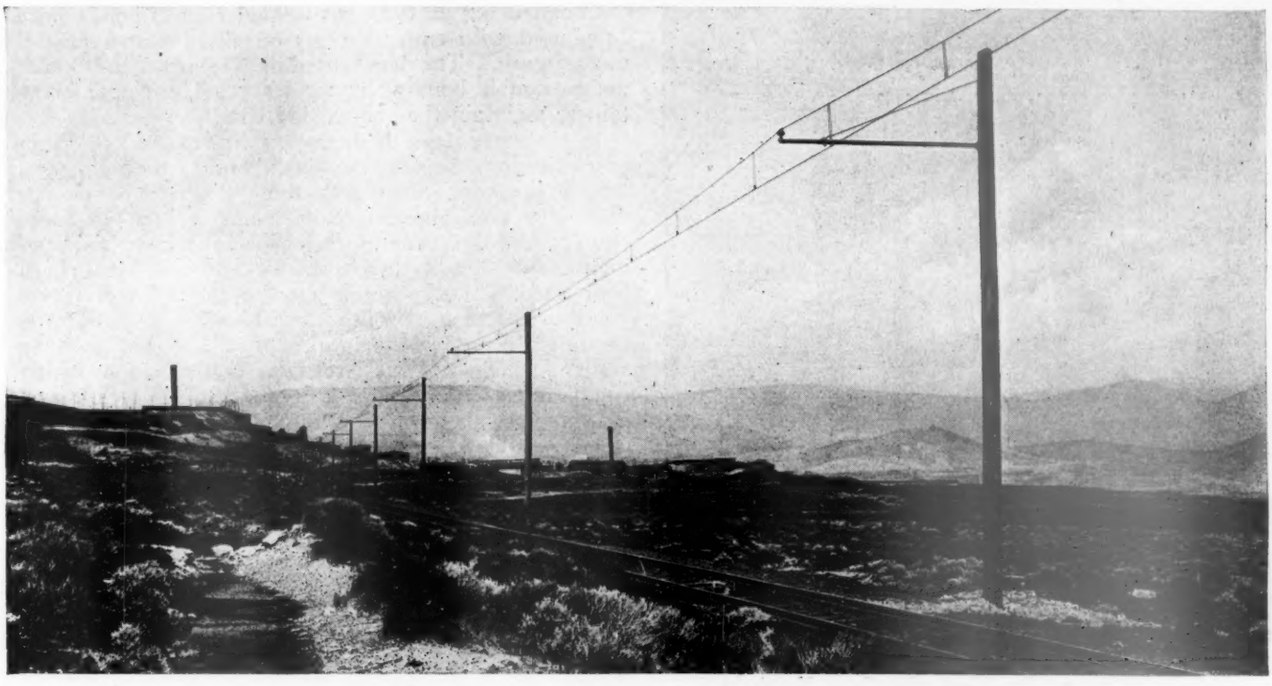
Electrification of Western Railroads

A sub-committee was appointed to study the general features of electric operation as practiced by railroads in the western part of the United States, and to obtain some indication of the advantages and economies accruing to the railroads from the change to electric motive power. This part of the report is broadly comprehensive and begins in each case with historical data and basic information concerning events leading up to the electrification. The equipment on each road is described and notes on operating results and maintenance are included. The following paragraphs consist of selected items of information taken from the report.

Butte, Anaconda & Pacific

This railroad, which is closely related to the Anaconda Copper Mining Company, extends from Butte to Anaconda, Mont., a distance of approximately 26 miles. The line is single-track with numerous passing sidings and four branches, two of which are used infrequently and are operated with steam locomotives. There are 28 B + B type electric locomotives used.

During the first 13 years of electric operation, only two electrical men were employed in the shop. It was not found necessary to make a complete inspection of the locomotives oftener than 60 to 90 days. Since the ruling of the Interstate Commerce Commission (effective in 1926) that the locomotives must be inspected every 30 days, it has been necessary to employ a third man. These three men do all the electrical inspecting, testing, and repairing of electric locomotives. They also take care of all electrical equipment on



On the Butte, Anaconda & Pacific Looking Toward Smelter Hill

cars and in the shop. It has never been necessary to give the electric locomotives a complete overhauling. The total time that locomotives are out of service varies from 4 to 10 days per year for each locomotive. The average is 7 days out of service and each locomotive is thus available 358 days in the year or 98 per cent of the time.

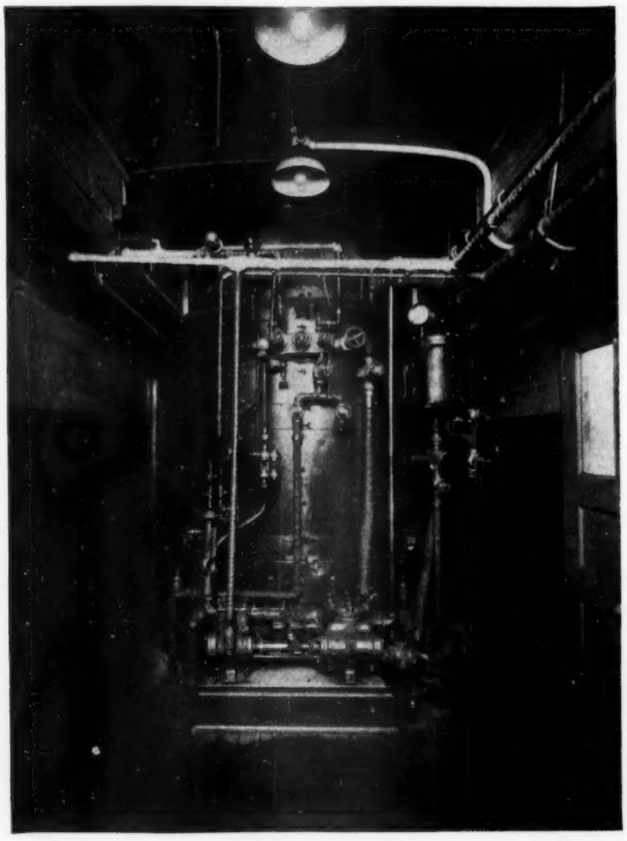
The maintenance expense for the locomotives has ranged in the last 12 years between five and eight cents per locomotive mile for the 80-ton units. About 80 per cent of the present maintenance cost is mechanical expense and 20 per cent electrical.

The maintenance of the distribution system including the contact line is cared for by a crew of three men using a gasoline-propelled tower car. Repairs on the contact line are normally handled without removing the voltage (2,400-volts d.c.). The cost of overhead maintenance runs from $140 to $180 per mile of all tracks electrified (single-track basis) and averages about $155 per mile per year.

There is a considerable gain in average speed of trains in spite of the larger loads handled. On the Smelter-Hill section it is now considered good practice for one crew to make eight round-trips in a 10-hour shift, taking up about 200 cars per day. This is more than 100 per cent increase over a day's work with steam. Under former conditions one locomotive and crew could make six round-trips and take up 96 cars in 10 hours. This improvement is made with the same crew in the same number of hours.

In 1928 the 28 locomotives ran slightly more than 700,000 locomotive-miles. The total annual mileage ranges from 300,000 to 1,100,000 miles depending on the activity of the copper business. Most of the locomotives are employed on switching service and ordinarily about one-half of the locomotive miles are for switching.

The railroad's accounts for the first six months after electric operation was fully in effect show that there was an immediate operating saving of $240,000 per year, of which $150,000 came from the substitution of electric power for coal. The total operating saving was approximately 20 per cent of the added investment.



Interior of Heater Car Used with Great Northern Passenger Trains

C., M., St. P. & P.

There are two long divisions of the C. M. St. P. & P. totaling about 658 miles, mostly single track. The total miles of track are 884.37. Fourteen passenger and 42 electric freight locomotives are used. The transmission and contact lines are maintained by a single crew for the Coast division and for each of the sections between Harlowtown-Deer Lodge and Deer Lodge-Avery (of the Rocky Mountain division). Each crew is equipped with a gas-electric tower car and reports to the general foreman of trolley and transmission maintenance.

The substation operators do the maintenance and repair work on the substation equipment, a small moving crew, consisting of foreman, electrician and helper, being used in addition for this purpose on the Rocky Mountain division.

Commencing in 1921 gas-welded copper bonds have been used with entire success on all new and maintenance work. The bond used is a short bond which makes double bonding unnecessary. The signal maintainers maintain the gas-welded bonds.

In the early days of operation on the Rocky Mountain division, before the installation of high-speed circuit breakers, there was some disturbance on the dispatcher's telephone circuit due to occasional flashover of the d.c. generators. Since the installation of high-speed circuit breakers this trouble has been eliminated. Short circuits on the 100,000-volt transmission system are so infrequent as to be considered negligible, due largely to the installation of a relay system which provides selective action in isolating trouble. Depending upon the severity and location of the short circuit the fuse in the telegraph and telephone wires may blow. This fuse protection has been found sufficient to protect the apparatus.

The original contracts, or modifications of them, were replaced by new agreements in July, 1929, one agreement covering the whole of the Rocky Mountain division and the other the Coast division. The only guarantee as to minimum payment is the fixed charge per mile, and the cost of power fluctuates with the amount used by the railroad company. That is, with the amount of business it happens to have done during the month. This feature is of particular importance

A Four-Unit Locomotive With 107 Cars, 5,037 Tons, Descending the New Chumstick Grade on the Great Northern

Great Northern Substation Housing Frequency Converter at Wenatchee, Wash.

under depressed business conditions, such as at present, when it is necessary to reduce cost of operation to a minimum. Inasmuch as payment is not based on demand, the effects of necessary occasional congested movements are not reflected in the power costs, and effects on the power bill of any change in traffic may be exactly determined.

Provision is made enabling the power company to utilize the railroad's excess capacity of transmission and transforming facilities. This results in the development of much sparsely settled country through which the railroad operates, to the ultimate benefit of both the railroad and the power companies. Many of the towns along the railroad are too small to support an individual power company and the distances are too great to encourage the building of transmission lines from more populous places. With the railroad's transmission lines already existing, it was judged desirable for both parties to work together to promote the electrification of the territory.

The electric locomotives normally run through the electrified divisions from one end to the other without change. Freight locomotive crews are changed at sub-division terminals, the runs averaging about 109 miles. Passenger-locomotive crews are changed only at Deer Lodge, the runs averaging 222 miles. The cutting out and switching of bad order cars, which was frequent with steam, has been largely eliminated. The fuel and water stations required by the former steam locomotives have also been done away with except for a few cases where it was convenient to keep them for some special reason, or for emergency steam locomotive use. Freight train tonnage has been about doubled and passenger trains have been increased by one car. Speeds have been considerably increased and passenger train delays reduced nearly 20 per cent, largely because of ability to make up time.

The gross amount of energy for locomotives comprises about 95 per cent of the total, and the remaining five per cent is used principally for shop power and signals. The locomotives on the Rocky Mountain division through regeneration return 12.7 per cent of the energy used by them in motoring, and those on the Coast division return 14.2 per cent. On the basis of the present power contract, this would have meant a minimum saving in the year 1928 of about $80,000.

It is impossible accurately to estimate the saving in brake-shoe wear under the conditions involved, but the amount should be over $45,000 per year at least. In order to prevent the wheels and brake-shoes from becoming too hot while descending the long mountain grades, it was necessary, with airbrakes, to stop

Interior of Great Northern Locomotive Shop at Appleyard, Wash.

about half way down the grade to cool the wheels and shoes. This has been eliminated by regenerative braking and since airbrakes are also available for emergency, both freight and passenger trains have the added safety of two entirely separate systems of braking. In addition to the saving in brake-shoe wear alone, there is also the saving in wheel wear, and wear and tear on the rest of the equipment. An important item in connection with regeneration, as regards passenger service, is the increased comfort of riding which is experienced by the passengers due to absence of dirt and the jars which result from the usual airbrake application.

When electric locomotives were first placed in service it was customary to put them in the shop about every 25,000 to 30,000 miles, to receive in turn, (1) light classified repairs, (2) medium or heavy classified repairs, (3) light or medium classified repairs and (4) heavy repairs or complete overhauling. This brought about a complete overhauling every 120,000 miles and the locomotives were held in the shops from four to six weeks. This has been found unnecessary and the shopping of locomotives for complete overhauling was discontinued on the Coast division in 1925, and on the Rocky Mountain division in 1928. At present there is not much shop work except to renew worn parts.

Tires on driving wheels are turned three times before being discarded. In order to divide the load equally between the different motors during motoring and regenerating, it is necessary to keep the tires under each locomotive as near the same size as possible.

Very light inspections are made at the end of every run and general inspections are made at the end of 5,000 miles for freight and 7,500 miles for passenger locomotives. Most faulty conditions are detected before train service is interfered with. This method of maintaining locomotives has proved much cheaper and more satisfactory than the old method which included general overhauling.

Great Northern

The Great Northern now operates 93.2 miles of track on 73 route miles, including a 7.79-mile tunnel. The locomotives used are of the motor-generator type which receive alternating current power from the trolley and convert it on the locomotive for the direct-current traction motors. There are now 10 freight units and 4 passenger locomotives in service, and 4 passenger locomotives on order. There are two types, the speed control of both being affected chiefly through voltage regulation by varying the field current of the main generator. These locomotives offer a great advantage for mountain grade operation because of maintaining a high average speed in relation to the maximum speed. The maximum power demand is also held close to the average. Constant horsepower output can be maintained at all speeds between 15 and 33 m.p.h. A locomotive can develop its full-rated horsepower on all grades exceeding seven per cent.

Communication circuits are exposed to interference from the contact wire, two 44,000-volt trolley feeders and a 13,200-volt signal feeder. Tests have showed that a 50 per cent reduction in induced current values under normal operating conditions can be secured by a separation of 1,000 feet; also, that a steel armored cable with armor grounded gives approximately the same shielding effect. It was decided to carry the communication circuits in open wiring on a pole line along the Stevens Pass highway which gave an average separation approximately as great as desired. In the long Cascade tunnel, the communication circuits are carried in a lead-sheathed cable which is enclosed in and shielded by a 3-inch steel conduit embedded in the concrete wall of the tunnel. The results are satisfactory under normal operating conditions. Several small improvements have been made since the system was installed and other changes will be made as advisable. In case of abnormal surges on the track circuits there is always trouble on the communication circuits. Consequently great care is taken to supply proper protective devices to safeguard employees and to keep these devices in proper operating condition all the time.

In the days of steam operation it was necessary to allow six or seven hours for an eastbound freight train between Skykomish and the summit at Cascade tunnel

station and 1 hr. 35 min. for a passenger train. The distance was 24.3 miles. With the electric locomotives at present in use a freight train can be taken from Skykomish to the summit at Berne in 1 hr. 30 min., and a passenger train in 54 min. The distance is now 21.2 miles, grade and curvature have been considerably reduced although the maximum gradient is the same.

It is difficult to make a comparison of steam and electric operation over the Cascade range because of the changes made in line and grade at the time that complete electric operation was introduced. One of the best criterions of operating economy is the ton-mile-per-train-hour or per-locomotive-hour. The train weights and speeds have been greatly increased with the result of multiplying several times the ton-miles-per-train-hour, per-locomotive-hour, and per-hour-per-100-tons on locomotive drivers.

In the first year of operation, the average number of trains over the electrified section in both directions was 12 per day. Passenger trains up to 15 cars and freight trains up to 140 cars were handled at average scheduled speeds of 27.5 m.p.h. and 14.5 m.p.h., respectively, for the best trains. Over 9,000,000 car-miles were accomplished for passenger and freight together and nearly 300,000,000 ton-miles of freight-train service. The power consumption was slightly more than 28,000,000 kw. hr., with a maximum demand of 15,000 kw. and a load factor of 23.8 per cent. The regeneration of power by electric braking on down grades amounted to 20.5 per cent of the kilowatt-hours purchased.

No artificial ventilation has been provided for the new Cascade tunnel, although it is nearly eight miles in length. The grade is all in one direction which helps to promote natural circulation and the only locomotives passing through it are electric. The air in the tunnel is always clear and it is possible to see daylight as a luminous spot at one of the portals from a distance of three miles within the tunnel.

Interstate Commerce Acts Annotated

WASHINGTON, D. C.

THE Government Printing Office has just released for distribution copies of the "Interstate Commerce Acts Annotated, prepared by and under the direction of Clyde B. Aitchison, Commissioner, for the Interstate Commerce Commission," a work which represents some 40 months labor by the commissioner and a staff which from time to time has varied from two or three to as many as 15 of the commission's employees. It includes five octavo volumes and 4,450 pages. The work was undertaken in response to a Senate resolution introduced by Senator Hawes, of Missouri, adopted January 28, 1927, which requested the commission to prepare and transmit a comprehensive compilation of the various acts administered by the commission and related provisions of law, with annotations, for publication as a Senate document. The original resolution called for the completion of the work by October 1 of that year but after the commission had pointed out the magnitude of the task the Senate on December 9 passed a substitute which modified some of the terms and extended the time. The commission transmitted the completed manuscript of the text to the Senate on the last day of 1929, but the tables and index were prepared later from the page proof of text.

More than 16,700 cases have been cited. More than 800 volumes of reports were searched, page by page, for material, and yielded some 200,000 points, which were reduced by condensation and combination to the approximately 100,000 citation-points which form the material for the notes of decisions.

Three-fourths of the text—138 pages more than three of the five volumes—relates to the interstate commerce act. Throughout the work, the text and arrangement of the United States Code are used as a basis. Title 49 of the Code, Transportation, chapter 1, Interstate Commerce Act, is merely the familiar interstate commerce act, and all sections and paragraphs bear the same numbers and letters. Thus, section 15a (7) of the Interstate Commerce Act is section 15a (7) of title 49 of the United States Code. In chapter 2 of title 49, the Code groups the so-called "supplementary acts," such as the Elkins act, expediting act, compulsory testimony act, immunity of witnesses act, Hoch-Smith resolution, and sundry provisions from appropriation acts and from the Panama canal act. The book devotes an even one hundred pages to these supplementary acts.

Chapter 2-A of title 49 relates to the divesting of their interstate character shipments of prison-made goods on arrival in a state. Chapter 3, "Termination of Federal Control," embraces titles 1, 2 and 5 of the transportation act, 1920. Title 3 of that act related to the United States Railroad Labor Board, and has been repealed, and the title 4 was made up of amendments to the act to regulate commerce, which thereby was metamorphosed into the interstate commerce act. The code compilers regarded the provisions of the transportation act as to the adjustment of compensation, guaranties, and loans to carriers during the transition from federal to private control, as temporary in character, and omitted such sections from the code. The present work includes all of these unrepealed portions of the transportation act, and follows the order of sections as there given, so that in this instance and also in the treatment of the Clayton act, in order to bring together the whole of the acts the original sectioning order has been followed, rather than the arrangement of the Code. Ninety pages are devoted to these portions of the Transportation Act.

Chapter 4, Bills of Lading, is included only in part, as much of the bills of lading act has no special relation to the relations of carrier and shipper. The sections included are those relating to delivery by the carrier; lost, stolen, or destroyed bills; and loading by the carrier or shipper, and weight and count provisions. These sections have been incorporated in the notes of decisions under sec. 1 (6) of the interstate commerce act, where they fit into the logical scheme of outline of the annotation.

Chapter 5, Inland Waterways Transportation, covers the New York State Barge Canal resolution, and the Denison Inland Waterways Corporation act.

Following title 49 the book takes up other pertinent acts and portions of acts in the order of their titles and sections as found in the Code, commencing with title 1. The federal possession and control act appears as a section in title 10, Army. The commission includes also the federal control and reimbursement for equipment act, which were omitted from the Code as being temporary in character.

The important title 15, Commerce and Trade, includes the Sherman and Clayton antitrust acts and standard time act. The transportation of explosives act is a part of Title 18, Criminal Code and Criminal Procedure. Title 28, the Judicial Code and Judiciary, includes provisions as to the jurisdiction of the district

courts of the United States, removal of causes arising under the Carmack and Cummins amendments; and as to the issuance of injunctions and temporary restraining orders brought against orders of the Commission. The railway mail pay acts and parcel post acts are included in title 39, The Postal Service. Title 40, Railroads, chapter 1, covers the safety appliance and inspection acts, the accident reports act, and medals of honor act. Chapter 3 includes the hours of service act and Adamson act; chapter 5, provisions as to government-aided railroads; and chapter 8, the railway labor act. Other chapters of the title have been omitted as inapplicable. Portions of the shipping act and merchant marine act, 1920, appear in Title 46. Title 47, Telegraphs, Telephones, and Radio-telegraphs, gives pertinent sections of the government-aided railroad and telegraph acts, and the radio act of 1927, so far as the commission's jurisdiction is affected.

The rules of practice before the commission with approved forms appear at the end of the compilation of statutes, and are annotated in like manner as the laws.

Variations between the text of the Code and of the original acts are shown in footnotes. Similarly, the successive amendments of the original act are indicated in each case so that it is possible to trace each phrase through its successive stages. The laws are annotated paragraph by paragraph, under the general headings "historical note," "cross references" "notes of decisions," and "regulations of the commission." The general typographical and editorial style is that of the United States Code Annotated.

Preceding the annotation of the interstate commerce act, a preliminary historical note traces the devolution of that act from its beginning, decisions are noted which treat of matters applicable to the act as a whole, or which involve the constitutional basis for regulation generally.

Throughout cross references are given freely, from statute to statute, from notes of decisions to related notes and statutes, and from and to index headings. For the Supreme Court decisions parallel citations are given to the principal unofficial reports, as well as to the decisions in the lower courts. Generally, the court history is given for all cases cited, whether decisions of the commission or of the courts. The field covered embraces the Supreme Court of the United States reports, Federal Reporter, Court of Claims reports, and the reports of decisions and annual reports of the Commission.

The undertaking is an annotation of the selected laws and not a digest of the opinions of the courts and of the commission. Decisions upon mere issues of fact, or which involved only discretion, or which were of a routine character are omitted, or else have been included only as illustrative. The points are aggregated and grouped under the basic paragraphs of law, and then according to a note outline built up categorically. The general treatment is encyclopedic. How comprehensive the annotation is may be judged from the fact that section 1 (5) which requires all rates to be just and reasonable, contains but 136 words of statute law, and the annotation embraces 326 pages of notes of decisions, arranged under about 800 different headings. The note outlines will permit periodical issuance of supplements and later insertion of additional topics without distortion of the scheme. This is made possible by leaving gaps in the consecutive numbering of the notes at suitable intervals. In any supplement additional authorities as to any point embraced in the present work will appear under the same note number, and numbers can be assigned where gaps in numbering now appear for additional subjects. This practice follows the "key numbering" usually employed in digests and in law encyclopedias.

To bring this vast mass of material into reasonable compass and useful order has been possible only by liberal interpretation and condensation. The decisions of the commission deal largely with facts. In a large proportion of instances it has been necessary to attempt to deduce and to state the principle found or applied, because the act was applied or administered by the Commission without a definite or quotable statement of the point of law decided. The statements, therefore, can not be literal, and are intended guides to the underlying authorities, and not themselves authority.

The whole work has been constructed with the idea of permanence in arrangement, yet so as to be capable of future expansion within the scope of the present design, as new acts or amendments become effective, and as the decisions grow in number.

Under the head "Regulations of the Commission" appear the text of the various general rules and regulations adopted by the commission from time to time under the authority of the particular provision of law under annotation, or else, when such regulations are too voluminous for insertion, references to the documents.

The text of laws and annotations, with the rules of practice, take up the first four volumes. Volume 5 contains more than 100,000 references. It includes a history of commission's decisions which have been reviewed by the federal courts; parallel citations for converting references to the early unofficial "Interstate Commerce Reports" into the official edition volumes and pages, and vice versa; a table of cases cited with references to the notes where cited; and a general index. The inclusion of a table of cases cited is unusual in an annotation of statutes, although essential in digests and text-books. It is believed that its inclusion will prove of much convenience. It will permit users of the work who know of a single precedent to locate the note in point where that case and other authorities, if any, are collected. It will also serve as a convenient index to the cases reported by the commission and the courts. For uniformity the titles of the cases have been reduced to a common standard of style, abbreviated according to accepted current usage.

The comprehensive index brings under one alphabetical arrangement about 31,000 references to the included statutes, notes of decisions, regulations, and rules of practice. The grouping is under some 1,300 alphabetical main headings. Liberal use of black letter sub-heads conserves space and aids the eye. The arrangement distinguishes references to points of law and the notes, regulations, and rules. All the typographical mechanical aids which experience has developed in like works have been employed to facilitate and to extend the utility of the book. The time consumed in getting such a work through the printing office makes it behind the times when finally issued, but it is expected that by suitable supplements hereafter, now in progress, the work can be kept closely to date as a matter of continuing routine.

THE MINNESOTA RAILROAD AND WAREHOUSE COMMISSION has no authority under existing laws to require railroads maintaining separate stations in a city or town to establish and maintain a union or single terminal freight station, according to an opinion by the attorney general of the state in response to an inquiry from the commission.

Best Defense Is the Offensive

Railway methods bureaucratic—Should help the coal trade—Why Wall Street has done nothing—Presidents should forget their antipathies

By F. J. Lisman

F. J. Lisman & Co.

Part II*

THERE has been a remarkable amount of commendation of the writer's remarks in the August 16 *Railway Age* about indirect rate manipulation and also much detailed confirmation of the correctness of these criticisms. One very well informed correspondent adds to certain specific charges the remark: "Sooner or later, of course, these practices will be the subject of investigation both by the Commission's Bureau of Inquiry and the Department of Justice, but what a pity it is that governmental agencies are so often required to correct conditions which violate the very fundamentals of good business management."

Some traffic men connected with industrial establishments contributed most interesting sidelights on the lack of knowledge on part of traffic managers of the changing conditions and personnel of the industrial establishments whose business they were soliciting.

Some correspondents again refer to the fact that the I. C. C. had refused to grant certain grain rate advances while admitting the need of additional revenue to the carriers. They thought it was up to the Commission to initiate such advances.

Railroad Officers Know What Rates Should Be Increased—Why Blame I.C.C.?

While the Commissioners are not influenced by political considerations—the opinion of many railroad men to the contrary notwithstanding—obviously they cannot be keen to have congressmen and senators call upon them or write letters to them objecting on behalf of their constituents to suggested rate advances. The railroad officers, themselves, know fully as well as the commissioners what classes of commodities could and should stand higher rates and if they lack the backbone to act on this information for fear of loss of traffic to each other, then they certainly should not pass the buck to the overworked Commission.

The I. C. C., just as the Supreme Court, is presumably affected to some extent by public opinion which, like the atmosphere, surrounds us. The grain decision, no doubt, is a fair example of this. There is probably very little difference of opinion on the subject but what grain rates should be advanced—but how could the Commission have done this just at this particular period?

Several correspondents complain about the "red tape" connected with the investigation by railroads of any new device. In most cases, this subject is referred to a committee composed of representatives of several departments. These generally either constitutionally disagree or dodge responsibility by doing nothing and passing the buck. Since the present business reaction commenced, many officers refuse to investigate new devices even though they might save their initial cost within one year.

Bureaucracy is by no means a government monopoly!

Manufacturing in Railroad Shops

Some correspondents have also referred to the lack of intelligent policy in the matter of manufacturing in shops. One correspondent writes:

> Too often the subject is regarded as a relatively unimportant problem, for which busy executives cannot spare time and attention. A superstition has spread among railway executives and bankers that if they had time and strength to look into it they would find manufacture in railway shops primarily the problem of keeping at work in dull periods employees who would otherwise be idle on the rolls or laid off.
>
> Railway managers will find to their cost if they do not get a first-hand grip on this tendency that it is neither a minor issue nor merely a phase of employment stability.
>
> Take some part going into the track structure. As an extreme illustration, let us suppose that a railway shop could be shown to have made such a part itself for less than any manufacturer would sell it at. To the man in the street this appears incredible. He asks himself, "How can the junior officers of an institution organized primarily to haul passengers and freight produce for the use of one railroad only and produce it more cheaply, an article which the owners and top men of non-railway mills in competition among themselves, concentrated on one speciality, can fabricate in mass production for all the railroads in the country? Is it the same article as tested by inspection and by period of survival in service? Are all the costs figured in? The man in the street would hail, if actual, such an achievement as a miracle. In real life such things do not happen. But suppose in some case the directing force of a railway allowed itself to become convinced that such a wonder had come to pass. Would that be the whole story or even an important chapter? This part which the railway shop is making: Who invented it? Who developed the appliance into which it fits and the material of which it is wrought? If it had not been for the existence and vigor, the laboratory personnel, resources and outlays of the competing manufacturers would the railroad have had the benefit of any such appliance? What advance in train operating economy has been made possible by this appliance? By how many hundred millions can such economy be measured? What will be the future loss to the railroads and to the public if this amateur tinkering shall result in impoverishing the source of mechanical improvement and discouraging the investment of capital in these mills and their laboratories? Almost from the foundation of our government it has been universally recognized that the benefits to the public from scientific progress are a dollars-and-cents justification for patent monopolies, even though for a time the price of the new article is thereby kept higher than if every one were free to make it. The same broad vision should animate the attitude of railways toward the industry which has produced the air brake, the superheater,

* Part I of this article appeared in last week's *Railway Age*. In it were discussed, among other things, the necessity for freight solicitors to study the requirements of their patrons, the extent and future of motor truck and bus competition and how it can be met, the inadequate taxation of highway carriers, competition by waterways, freight car pooling and governmental meddling. This article is a sequel to another from Mr. Lisman's pen, entitled "A Diagnosis of Railway Ills," which appeared in the *Railway Age* of August 16 and which occasioned widespread comment.—Editor.

the automatic signal and a thousand other instruments of efficiency and economy. Puttering with manufacture in a railway shop is penny wise and pound foolish. The policy is a major concern of management.

Permanent Manufacturing Policy Makes for Employment Instability

Likewise the stabilization of shop employment is a subject for foresighted consideration. What advance has been scored in such stabilization if the railroad which turns its men in off seasons to the production of necessaries finds itself organizing a permanent manufacturing force, a large part of which must be laid off for months in the day of slump in traffic and earnings? That is the tendency—in human nature and in current experience.

Have the railroads so many interested and active friends in the business world that they greet with enthusiasm the transfer of industrial operation, influential in every community, to railway shops? Have railroad men no memories? When some of them recall the dynamic if not decisive activity of the railway supply industry in persuading the public and Congress to sanction the present statutory standard of adequate income do they and their contemporaries who hear them imagine that no matter what policy the roads pursue such industrial force will survive in equal strength and eagerness? Some of them must have observed that the persistent sag in the railway market for materials, equipment and supplies has led that industry far along the path of diversification. Is it wise to aggravate this unavoidable trend? In the next attempt at federal seizure of the roads, in the constant struggle at Washington to impoverish the roads preparatory to seizure, in the evolution meantime of a public attitude toward routine rate adjustments as these bear on railway income, do the railroads desire the element which is still chiefly manufacturing railroad accessories to be expanding in non-railway industry or contracting there and expanding among railway employees?

Taxes on Railway Shops Mounting Faster Than on Private Industry

Is the railway labor problem so completely solved that our systems should embrace an enlargement of the scope of things to be done on their own payrolls? Is capital so easy for railroads to obtain that they can build shops and install machinery duplicating non-railroad plant already available or ready to be built in response to demand? Is it absolutely essential for our railroads to increase through shop extension the property upon which taxes are mounting faster than on non-railroad industrial property?

Either a railroad intends to go further into manufacturing or to get gradually out of it. Every railroad that is in it should be on the way out. A simple and salutory measure for every system is to issue mandatory orders forbidding the construction of new buildings or the replacement of worn-out buildings or machinery except upon definite showing that such investment of capital in plant is indispensable for promptness and efficiency in repairs.

While there seems to be a wide difference of opinion on this particular subject, it would seem to be undoubtedly correct that a railroad shop is an incident to railroad operation. It should not be considered as a manufacturing plant. Only under very exceptional conditions is it likely that a railroad company can manufacture as cheaply as a concern which specializes in some particular article. It is also quite true that the railroads cannot have too many influential friends.

Coal the Most Economical Fuel

The reference to competition of natural gas pipe lines to the coal producer has brought some extremely interesting correspondence and interviews. Among others, there has been called to the writer's attention an article which appeared in the Midwest Coal Retailer, entitled "Comparative Fuel Values of Coal, Oil and Gas," by C. V. Beck of St. Louis. This article deals scientifically with the subject of cost of producing steam with coal, artificial and natural gas and oil. The writer claims that coal, at prices as high as $5 per ton or less, if economically burned with up-to-date equipment, is much more economical than any other fuel. Verification of this statement has been obtained from people who are not interested in coal and from specialists in the generating of steam. Heating private houses by natural gas or automatic oil burners is a convenience and luxury undoubtedly worth the difference in cost to many people. Many enlightened public utility operators concentrate on this type of customer, realizing full well that they cannot permanently sell their product advantageously to the larger consumers of heat or power.

Even water power, unless produced very cheaply, can hardly compete to advantage with coal except in localities where coal has to bear a very high freight charge. The cost of water power is permanently fixed for several generations by its cost of development, while the cost of power generated by coal is being reduced from year to year owing to the progress in scientific combustion.

While the combustion of the carbon contained within the coal naturally has a limit which in some cases is nearly reached, the uses of the by-products for chemical purposes is capable of much further expansion.

The Coal Trade Needs Co-ordination Badly

The coal trade is in extremely bad shape which is not only serious to the owners of the coal mines, but also to the railroads. The producing capacity of coal mines is twice the present consumption, although, as a matter of fact, the decline in the production of coal thus far in 1930 is no greater than the average decline in the production of other commodities. The market for coal is suffering from too many competing coal fields, in each of which are located too many competing mining companies. For example, any consumer of coal in the Chicago market who would advertise for tenders for as little as five thousand tons of coal, would probably receive offerings from upwards of one thousand producers. Only a very few exceptionally well located and well managed producers have made a small profit during the last few years. The coal trade, like the railroads, needs co-ordination badly.

President Hoover, in his recent speech in Boston, pointed to the disorganized condition of the coal trade and stated that there were 6,000 mining companies owning 7,000 mines.

Everyone in the coal trade knows that consolidation must come. They all talk about it and hope it will take place promptly, but most of the producers want to stay out of any combination in the hope that the others will be compelled to join and that they, themselves may exact a better price by staying out; this situation cannot last indefinitely. In the meanwhile all coal producers and the railroads are suffering because the trade as a whole is rapidly being cut into by other fuels.

The coal trade must encourage economic consumption of its product which may mean a lesser consumption of coal per plant but a greater consumption in the aggregate because with the most modern system of furnaces and stokers, coal at any fair price is cheaper than oil, gas and 90 per cent of the hydro-electric power.

Railroads Should Help the Coal Operators

Coal is the most important item of railroad tonnage, constituting approximately one-quarter of the whole and on several important carriers, over 80 per cent. Therefore, it is up to the railroads to co-operate to the best of their ability with the coal producers.

The coal tonnage can be held by the railroads, but not without intelligent and energetic work by all parties concerned in producing, shipping and marketing this commodity who must show the merit of their product to the ultimate consumers.

The consumer must be assured of steadiness of his supply which has been frequently interrupted by strikes

which drove the consumers to use other fuels. The coal trade, except for intervals of strikes, prospered steadily up to the close of the World War and producers, with very few exceptions, entirely neglected the angle of scientific marketing of their product. It has suffered from short-sightedness of leadership on part of both the companies and labor and very much from political meddling. Since 1921 most coal companies have been too poor or disheartened to properly develop their own business. The law of the survival of the fittest, as pointed out above, is slowly and painfully working out the coal situation, but if this process could be accelerated it would be helpful to all parties concerned and would obviate the necessity of regaining customers which are being lost in the meanwhile by the much more energetic propagandists of other fuels.

Trainload Rates Would Meet Pipe Line Competition

If the railways were permitted to make a particularly low rate on trainloads (say, not less than 50 cars) of gasoline, they could compete with the pipe lines if interest and depreciation charges on these pipe lines are properly figured. Heretofore, in order not to give undue advantage to large over small shippers, trainload rates have not been permissible.

Why Doesn't Wall Street Lend a Hand?

Another correspondent criticizes: "I am sure this article has started many railroad managers and traffic managers thinking along more constructive lines. Nevertheless, it seems to me that the position you take is one which should be given much thought and concerted action on the part of the New York bankers who, after all, are the bosses of the fellows who are operating the railroads. The bankers are the fellows who can call their hired men in and tell them to get busy along the lines you have outlined. The czar would do the trick."

There is much force to this. The large firms in Wall Street, at times, have been severely and unjustly attacked in Congress. Therefore, they are trying to relieve themselves of a responsibility which should be theirs. They are fearful of being accused by Congress, on the stump, and otherwise, of running the railroads and other large and important concerns. Members of Wall Street firms, in common with the rest of the community, have little desire to be cross examined or crucified by Congressional committees; everyone knows that things which are done in good intent and which are perfectly proper, can be twisted into grotesque forms by able attorneys in cross examination.

Railroads Share Adversity But Not Prosperity

Many railroad men, as well as investors in railroad securities, refer to the fact that whenever there is a period of adversity such as flood, drought or famine, the railroads are asked to help and do help, while they are never permitted to share in any extraordinary prosperity. They call attention to the fact that the cut in grain rates last spring has been of absolutely no service to the producers. These complaints, undoubtedly, are quite just. The railroads never decline to harken to high officials when called upon for help in an emergency. Getting concessions from railroads is always good politics for the party in power, but rough on the railroad stockholder.

Railroad stocks and bonds, since the first of the year, have declined in price relatively more than other securities and, on the whole, have shown very little recuperative power. Investors and the people at large have no doubt whatever that sooner or later general business is going to improve and will be in excess of any previous high water mark. There is, however, a strong feeling prevalent that the railroads may not come back to such an extent. There is a fear that trucks, buses, aircraft and waterways will cut deeply into the railroad companies' revenues which cannot be made up in other directions.

J. S. Wilson, Jr., & Co., a Baltimore brokerage house, has recently published a most interesting and somewhat optimistic booklet under the title of "The Railroads—Past and Future" in which is most graphically shown the growth of automobile traffic and it is pointed out that on September 26, last, ten leading railroad stocks sold at prices to yield a return of 5.61 per cent, while 10 leading public utility and industrial stocks yielded 3.86 per cent and 3.48 per cent respectively.

The ticker certainly does tell the tale of the public's attitude which may or may not be a true forecast of the future. Whether it is correct or not depends altogether on Congress, on the farsightedness of railway officials and, to some extent, on the I. C. C. President Hoover, in his speech in Cleveland, indicated that he was realizing this situation to some extent and it is to be hoped that he will refer to this in his next message to Congress, because the situation is extremely urgent.

Senate Committee Inimical to Rail-Highway Co-ordination

If Congress could be convinced that it should encourage joint operation of rail and highway carriers, it would be very helpful. There is now pending before the Senate a report from its Interstate Commerce Committee, of which Senator Couzens is chairman, which would prohibit the acquisition of any bus line by a competing railway.

The securities of the northwestern carriers have been conspicuous in the recent market decline because the public seems convinced that the carriers in that section cannot be operated at a profit with the prevailing rate structure. Labor politicians have prevailed on the railway or public service commissions of the northwestern states to oppose the Great Northern-Northern Pacific merger which, with a guarantee to existing employees against loss of their jobs, etc., would reduce operating expenses of these roads of many millions. The radical element of Congress, ever eager to court the influence of professional labor men, threatens to enact legislation prohibiting this and possibly other mergers with their concomitant increase in efficiency.

The I. C. C. could be decidedly helpful in increasing the net revenues of the carriers by being less technical and more liberal in permitting the abandonment of no longer required branch lines or stations. But—the most important element must be aggressive "self-help."

Railroad Credit Declining

The writer is in an exceptional position to know that railroad credit is emphatically on the decline and if Congress and the railroads do not do something promptly to remedy this situation, our railroad system which has shown its ability to give such wonderful service ever since 1920, will deteriorate and this will react on the shippers and the employees, which latter are now receiving better remuneration than probably any other labor anywhere in the world.

The public is much more interested in service than in rates, but when the service is good the shippers forget their previous difficulties and losses owing to car shortages and other inadequate services. They want lower rates, each one believing that, somehow, he will get the benefit of this lower rate as against his competitors.

Sad but true, railroad presidents seem to take more

or less a short-sighted attitude. Very few of them think of the railroad industry as a whole; they are always thinking about getting some little advantage for their own company as against a competitor.

Sharp Competitive Practices Only Serve to Penalize the Whole Industry

This writer's article in the *Railway Age* of August 16 referred to wasteful traffic competition. Another example of myopic selfishness is what is going on in truck and bus competition, as well as in connection with store-door delivery. A number of companies are owners of or are co-operating with highway lines in an endeavor not only to protect their own traffic, but to get something away from the other fellow—even using doubtful legal methods.

One of the important railroad systems, through a holding company, has bought up (at a fat price) a large trucking concern as well as local coal distributing organizations in the expectation of getting a greater share of business in that manner. No doubt its competitors will retaliate in due time and at the expense of the stockholders, who in many cases own stock in the competing companies.

In the previous article reference was made to the loss of cotton traffic to the trucks. Of late, these cotton rates have been substantially reduced and business regained for the railroad companies. Possibly some little net revenue was gained in this matter compared with nothing during the last year or two, but compared with a substantial net in 1927 and previous to that.

Whole Rate Structure Needs Readjustment

It is certain that the existing rate structure must be completely adjusted to meet the new conditions; many rates must be reduced to meet highway and other competition and to hold traffic when this can be done at a profit. Other rates must be advanced to whatever the traffic will reasonably bear. If this theory is correct, then action must be taken promptly.

It cannot be stated too often that these changing conditions can only be faced by the railroads as a group, instead of singly. High railway officers do not agree on many subjects other than about excessive taxation and such matters, but they probably would agree that this action of rate adjustment and co-operation to meet present and future competition cannot be taken by individual companies; nor in any conference. There will never be any joint action unless the power is concentrated somewhere. Individualism and democracy are very fine theories, but the United States Constitution provides that whenever we are at war (that is, when we are in real trouble) the President becomes head of the Army and Navy. In effect, we provide a czar. No progress was made toward victory in the late war in France until the Allies appointed a supreme commander.

A Challenge Which Suggests a Program

1. Have the railways really fought the long-haul bus lines which have no economic reasons for existence?

2. Have they fought back at the long-haul truck lines?

3. Are they showing to the public the abuse of the expensive highways?

4. Have they shown the public at large (not the "highbrows") the tax waste of waterways?

5. Are they really trying anywhere to give the pick up and delivery service which the shippers desire?

6. Are they letting anyone know that these new natural gas pipe lines are being capitalized at from $50,000 to $100,000 per mile, which certainly looks extremely high?

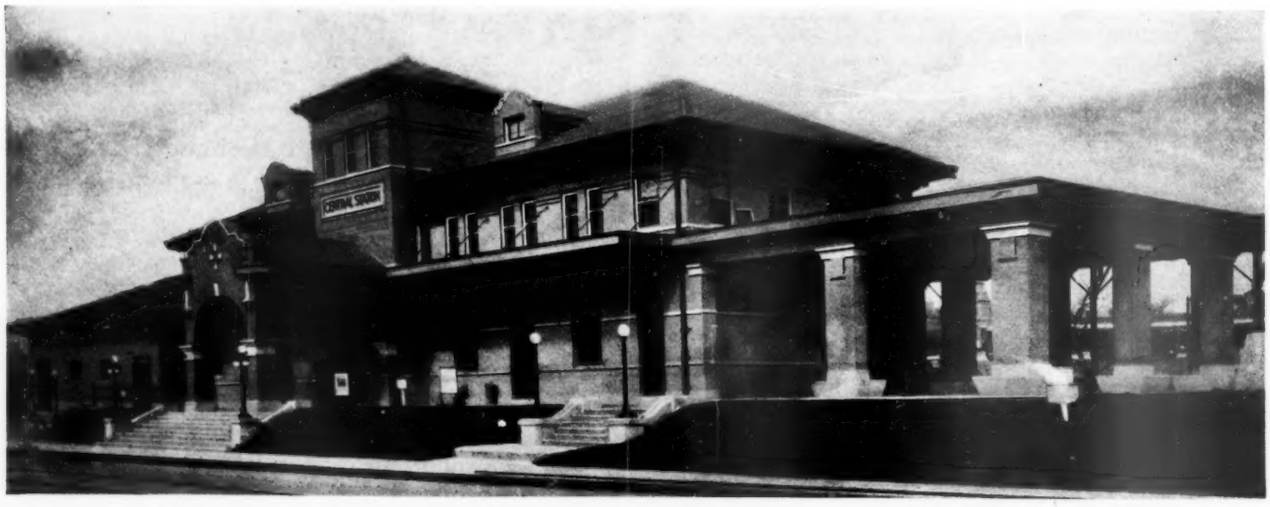
7. Are they co-operating to demonstrate the merits of coal as an economic fuel?

8. Are they trying to their utmost to prevent the construction of gasoline pipe lines? If not, why not?

The railroads are now in real trouble and can only be saved by prompt, joint action, as pointed out above. The gasoline, natural gas pipe lines and highway competition can be met but only by equally prompt and energetic joint action.

The railroad presidents for once must all be big enough to forget their antipathies and jealousies. If they do not do this, the railroad stockholders should get busy. If the railroad companies do not hang together at this time, they will hang separately. Again—Dis-union is weakness and only in union is there strength!

* * * *



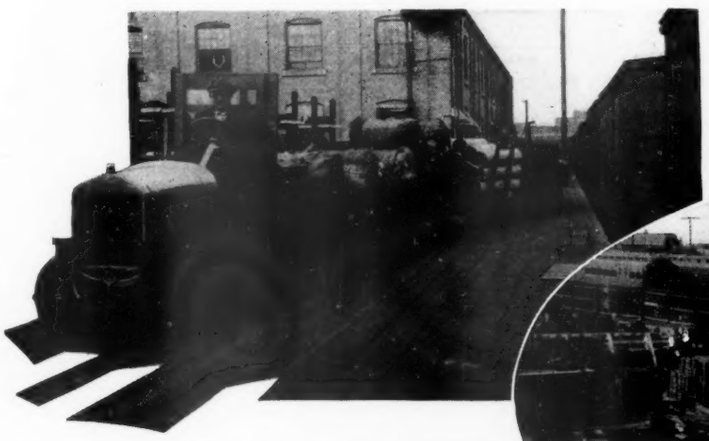
Station of the Louisiana & Arkansas Railway at Shreveport, Louisiana

Motorized Delivery Reduces Cost on Canadian National*

Over fifty per cent saving in labor expense claimed for operators at one point

By William Courage

Stores Department, Canadian National, Fort Rouge, Winnipeg



Store Facilities and Operations at Winnipeg, Man.

THE Canadian National has employed stores delivery in all of its principal locomotive and car repair plants since 1926. At Fort Rouge, Winnipeg, it has reduced the cost of shop supply operations about 58 per cent and has proved an excellent medium for closer co-operation between all departments.

The repair froces at Fort Rouge include 690 mechanical department and 1,300 car department employees, or a total of 1,990 men. In the course of an average month, the mechanical department requires materials costing about $86,200, and the car department, about $98,200, or a total of $184,400.

Prior to stores delivery, these supplies were transported from the stores by each department, either by hand trucks or by four-wheel trucks which operated on narrow-gage tracks. The economy of the system now in use is shown by the following data, which give the cost of handling an average of 11,000 requisitions a month.

Cost of Handling Material before Store Delivery		
3,652 man-hr. at 50 cents per hr.	$1,826	
Inter-plant transfer of material by chain gang	566	
Total		$2,392
Cost after Store Delivery		
Labor charge per month	$ 936	
Maintenance of equipment	50	
Total		986
Reduction		$1,406

The expenditure for equipment was as follows:

1 gasoline tractor	$1,512
1 electric tractor	3,222
18 rubber-tired trailers	3,614
Total	$8,349

In addition to these savings, it is no longer necessary to maintain any local stores in the various departments, which affords a further saving in labor and eliminates the investment in the material.

Operating Methods

A staff of nine men are employed exclusively for this service, working under a supervisor. To keep the organization operating effectively, the work is organized on an hourly schedule, from the collection of requisitions to the ultimate delivery of material to the users.

Collection boxes, similar to postal collection boxes, are installed as close to the various foremen's and subforemen's offices as it was convenient to put them. These boxes, called stations, are identified by numbers, and all requisitions for material are deposited in them. The foremen who place requisitions mark the station number or the point to which they desire to have the material delivered in the upper right-hand corner of the requisitions, and a messenger from the stores collects them every hour. He begins his collection on the hour and completes it in 20 minutes. Upon his return to the store, he gives the requisitions to the supervisor who distributes the orders to the various sections in the store.

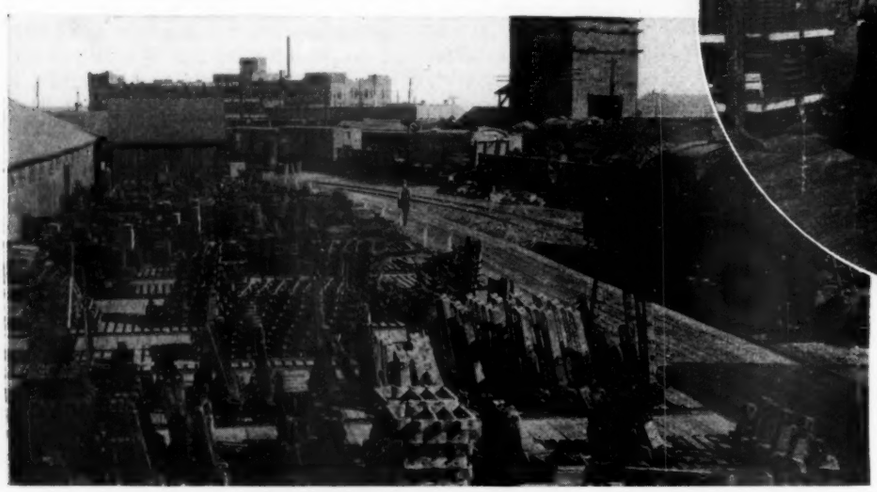
As material is collected, it is tagged with the name of the department requiring it and loaded on a trailer. Boxes are used to facilitate handling small shipments, such as small orders of bolts and nuts, rivets, small castings, etc. These boxes are 12 in. by 15 in. by 7 in., and are made of 18-gage galvanized iron with hoop iron handles. They protect such material as finished brass which may be damaged in transit and eliminate the necessity of the storeman's having to wrap or tie the material.

When an employee issues material from a bin, he im-

* From a paper entered in the annual contest of the Purchases & Stores Division of the A. R. A.

mediately prices the requisition and records the issue on a bin card. If he should have a requisition for material which is not in stock, he places a ring around the amount required to indicate that it should be ordered while, if a partial amount has been supplied, he places a ring around the amount required and puts the amount supplied immediately before the ring.

After he has supplied all the material that he can, the storeman returns the requisitions to the supervisor who immediately fills a back-order form in duplicate. One of these forms is forwarded immediately to the stockkeeper, and the other to the foreman requiring the material. This form contains all the information required and eliminates confusion between the stores and repair shops. Thus, the shop foreman either receives his material or a back-order form. The stockkeeper keeps this information on file, and, when a shipment is received of the material which is back-ordered, he immediately returns the shortage slip to the delivery supervisor who forwards it to the foreman with the information that he can obtain the material.



Both Electric and Gasoline Equipment Are Used in the Delivery Work

Unify Power Equipment

With the inauguration of the hourly delivery system, it soon became apparent that a regular transportation schedule was required to get the maximum service from the trucks. The truck operators, after assembling their trailers, are required to leave the stores exactly on the hour and should complete each trip in about half an hour, leaving the remainder of the hour for the interdepartmental transfer of material.

Where material is being delivered to the car repair departments, which include the coach repair shop, the freight car repair shop, the repair tracks, running yards, etc., which are spread over a large area, it has been found advisable to load all the material needed by one of the departments on a trailer assigned to that department. The truck operator leaves the trailers at the different stations and collects the "emptys" on his return to the stores. By doing this, he has the trailers back at the stores ready for the next hour's delivery.

The requirements of the locomotive repair department are somewhat different from those of the car departments. Receiving stations, in the form of tables, placed adjacent to every gang in the erecting shop, accelerate the delivery and eliminate the possible loss of the small materials.

Although the gasoline and electric tractors are used exclusively in the service of the delivery system, an electric lift truck and a 1½-ton-capacity electric crane are also used in loading and unloading cars at the stores. The crane is also used to good advantage in handling heavy castings consigned to the locomotive repair department.

Good roads are necessary for the successful operation of any transportation service, and more so in northerly latitudes where, during winter, severe climatic conditions prevail. Concrete roads have been laid at Fort Rouge to serve as the main arteries about the plant, while inexpensive roads, built of scrap lumber from the car repair shops, have served the purpose where the traffic is light.

Perplexing problems arise during the winter which requires the co-operated energies of all departments to get the roads cleared of snow so that the hourly delivery can be maintained. Snow plows, which can be attached to the electric trucks, are a great help in meeting this problem.

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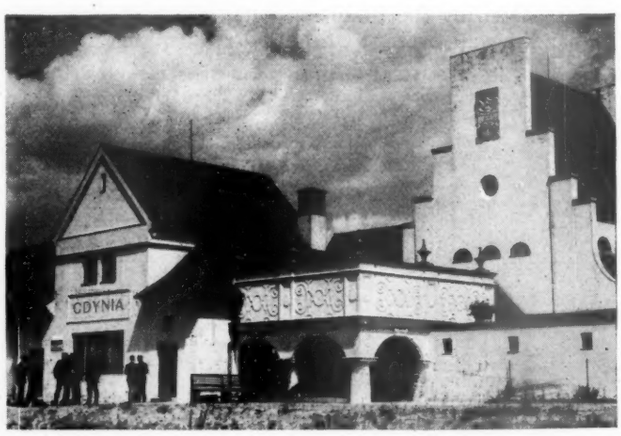


The Railway Passenger Station at Gdynia, Poland's New and Only Port on the Baltic Sea

The Placing of the Bearings on the Bridge Spans Requires Accurate Work

Bridge Men Meet at Louisville

Reports on camp cars, water-tank maintenance, modernizing of stations and upkeep of turntables were high lights of convention

SUPPLEMENTING the report of the fortieth annual convention of the American Railway Bridge and Building Association, which appeared in the issue of November 1, we present below abstracts of four committee reports which are outstanding in their interest and value. These reports cover current trends in camp car facilities, the inspection and maintenance of water-tanks, the modernizing of passenger stations, and the maintenance of turntables.

Camp Cars for Bridge Forces

The most complete report presented at the convention was that submitted by the Committee on Camp Cars for Bridge and Building Forces and Measures for their Improvement, of which C. M. Burpee, purchasing engineer of the Delaware & Hudson, Albany, N. Y., was chairman. In addition to a summary of the practices on 87 railways embracing some 250,000 miles of line, in which it was shown that marked improvements have been made in the feeding and housing of the bridge and building forces, the report contained detailed descriptions of camp-car equipment in service on the Delaware & Hudson, the Kansas City Southern, the Detroit, Toledo & Ironton, the Southern Railway and the Western Union Telegraph Company. A brief outline of the report follows:

The providing of suitable camp cars for bridge and building crews is governed by a variety of conditions, some of which are general while others vary with locality and environment, such as the desirability of conforming to the racial or social

An Outfit Train on the O.-W. R. R. & N.

habits of the men. It has been truly said that three elements are necessary to obtain and retain a good class of men; good food, clean sleeping accommodations and facilities for personal cleanliness.

Class of Equipment

It is quite important that camp cars should be well constructed and properly maintained, that they may be ready for an emergency movement at any time. It is interesting to note that 11 railways are now using coaches converted for camp car uses. Thirty-six others use coaches and box cars while 23 roads use converted box cars. The Great Northern and the Northern Pacific use coaches and box and refrigerator cars which afford proper insulation in their respective territories, while the former has retired all 33-ft. cars from this service and has replaced them with larger ones which provide more room and air. The Charleston & Western Carolina, the Detroit, Toledo & Ironton, the Elgin, Joliet & Eastern, the Gulf, Colorado & Santa Fe, and the Kansas City Southern report that certain of their outfits have been designed and built new.

A further indication of the interest that is being manifested in better cars is that 28 per cent of the roads answering a questionnaire are now providing utility or recreation rooms. The Wabash and the Ann Arbor have camps heated with hot water systems and the latter road supplies its cars with double windows as additional insulation for cold weather. These camps are also provided with gas-engine generator sets for electric lights, as are cars of the Great Northern. Thirteen other roads have camp cars which are wired and furnished with electricity when so located that connections may be made. Forty-one per cent of the roads reporting are furnishing their men with individual lockers.

The camp coaches of the Western Maryland are provided with roof ventilators and latrines. Lehigh Valley and Pere Marquette camps are furnished with sanitary chemical toilets. Practically all roads provide screens for summer use. Eleven roads report that they provide bathing facilities. These are very desirable and may be installed at very little expense. The Elgin, Joliet & Eastern cars are equipped with latrines and are disinfected weekly with a commercial insecticide, while it is a practice of the Western Pacific to fumigate all cars thoroughly at definite intervals, and regular inspections are made by the supervisor of labor to insure cleanliness and sanitation. On the Norfolk-Southern the medical examiner makes a similar inspection for the same purpose. On other roads, the supervisory officers make regular inspection, a proceeding which cannot be overdone. Cars should be maintained in good condition, cleaned regularly and kept free from all vermin. Supervisors should also enforce regulations whereby the right of way immediately adjacent to the camps is kept free from debris and undesirable accumulations of scrap of all kinds.

Dining Car in a Camp Car Train on D. & H.

Arrangements for Feeding

Several different means of feeding the men are in vogue. Fifty-six per cent of the roads hire the cooks and in these instances the actual cost of supplies is pro-rated among the men, with costs varying from 14 cents to 30 cents per meal; in the majority of cases the cost ranges from 20 cents to 25 cents. The commissary system is used by 11 per cent of the roads, with costs ranging from 23 cents to 60 cents per meal; the same number of roads report that they do not provide any system of feeding. The foreman boards the men in 15 per cent of the instances reported, with costs varying from 25 cents to 45 cents per meal.

Eleven per cent of the roads reporting do not furnish dishes or cooking utensils. Table dishes in the majority of cases are of heavy hotel type china. Replies indicated that 86 per cent of the railways furnish ice-boxes or refrigerators with their kitchen facilities.

Sleeping Quarters

Eighty-nine per cent of the roads report that steel berths are now standard equipment. The number per car varies from 4 to 16, depending on the size of the car. Thirty per cent of the roads are now supplying bed clothes and 18 per cent have systems of laundering, either in railway laundries or a form of collection and delivery by commercial laundries located at central points. Fifteen per cent report that they furnish mattresses only, while 55 per cent do not furnish any bed clothes.

Water Supply

Fifty-three per cent of the railways do not have any special means of providing water; of the remaining 47 per cent, several different methods are employed. Many roads employ overhead tanks of 50 or 60 gal. capacity and these in turn are supplied from large tank cars carrying several thousand gallons, by hand or gasoline pumps. Two railways have installed automatic electric pumps with tank cars as sources of supply.

Tool and Supply Cars

Several railways are extending their good housekeeping methods to their tool and supply cars. The Atlanta & West Point, the Lehigh Valley, the New York Central, the Pere Marquette and the Delaware & Hudson are now using obsolete baggage cars for this purpose. In some instances where two box cars were formerly required to house the necessary tools and materials, one baggage car serves the purpose.

The design and construction of modern, healthy and sanitary camp car equipment must be accompanied by an adequate arrangement of camp rules, supervision and inspection that will insure good housekeeping and proper discipline. With such a system in vogue there is not the slightest doubt but that returns, in the form of increased efficiency, reduction of labor turnover, and a spirit of satisfaction among the employees, will be far in excess of any reasonable expenditures that may be made for improvements.

Discussion

The discussion of this report showed the growing appreciation among division as well as executive officers of the increasing returns that are derived from modern camp equipment for those bridge and building forces which are, by reason of their duties, required to live away from home. The substitution of Pullman sleepers and passenger coaches for box cars and the equipping of them with hot water, shower baths, electric lights and recreation rooms, was shown to have a marked beneficial effect in attracting and holding more efficient labor and increasing their contentment.

Supplementing these advantages, R. D. Ransome (C. & N. W.) called attention to the value of housing men in modern equipment as a means of moving them more promptly in an emergency. He urged that the cars be equipped for transportation as well as living purposes.

Inspection and Maintenance of Water Tanks

The committee, of which E. H. Brown, supervisor of bridges and buildings, Northern Pacific, Minneapolis, Minn., was chairman, presented a comprehensive report on the inspection and maintenance of water tanks. While a brief reference was made to concrete tanks, the report was confined to practices relating to steel and wooden tanks. The following abstract of the report is limited to that portion relating to the organization for inspecting tanks and to considerations affecting painting and repairs:

The cost of the maintenance and repair of tanks and their appurtenances depends upon: (1) The design, materials and methods used in the original construction; (2) the frequency and character of the inspections and the attention given the resulting suggestions and recommendations; (3) the entire performance and length of life of tanks and their appurtenances depend upon the amount of interest taken by superior officers in their maintenance and operation. It is their duty to see from time to time that they are properly operated and maintained.

On account of differences in the organization and titles of bridge and building and water service departments of various railroads, no definite recommendations are made as to the person who should be delegated to make inspections. However, in general these should be about as follows:

(1) Pumpers or other employees whose duty it is to look after the tank are in a position to report to their immediate superior officers any noticeable defects in the tank or appurtenances, and they should be instructed to do so.

(2) Pump repairers or water service foremen, on their periodic tours of inspection, should take care of "running repairs" and report to their immediate superiors any defects or repairs that should be taken care of, as well as to make recommendations for changes, renewals, etc.

(3) Tanks should be inspected quarterly or at least semi-annually by the supervisor of water service, the bridge and building supervisor, the master carpenter or other officer directly responsible for tank maintenance.

Painting

With wood tanks, improved appearance is about the only advantage of paint on a tub, as it will probably last just as long unpainted. As a general rule, untreated wood and steel tanks require painting about every three years. Treated wood tanks have the advantage over these types as they require no painting except possibly the hoops and metal work.

With some steel tanks, especially where cold water from deep wells is stored, considerable trouble is encountered from pitting and corrosion on the exterior of the tanks because of condensation in hot weather. These cases can best be handled late in the fall after the temperature has dropped to the extent that the tank ceases to sweat. If the tank has become badly pitted it should be sand-blasted and then painted.

Many different forms of protective coatings have been used for the interior of steel water tanks, with more or less success. These materials can be classified as follows:

(1) Paints using linseed oil as a vehicle and various materials for pigment and driers.

(2) Asphaltic and coal-tar paints in liquid form.

(3) Asphaltic and coal-tar mastics applied hot.

(4) Petroleum-jelly compounds, usually containing some rust-inhibitive such as chromium salts.

(5) Emulsified asphalts.

(6) Portland cement grout.

The principal objections to red lead paint are, first, the length of time required to allow for drying before being immersed, second, the comparatively short life. This formula has been recommended for a quick-drying red lead paint:

100 lb. red lead in oil
1½ gal. boiled linseed oil
3 pt. turpentine
2 pt. liquid dryer

When the paint is ready to apply, add 2 lb. of finely powdered litharge to every gallon of paint. Allow at least one week between the priming and second coats and 48 hr. between the second and third coats, and between the third coat and immersion.

Approximately three years has been indicated as the period that a good coating of linseed oil paint can be expected to provide protection against pitting and corrosion. Linseed oil paint is valueless as a protective coating in washout tanks on account of the usual quality and temperature of the water, and is of very little use in treated water storage tanks where caustic alkalinity would affect it.

Asphaltic and coal-tar paints do not require as long to dry and therefore do not require the tank to be held out of service as long as linseed oil paints.

Mastics are usually applied hot over a priming coat of asphaltic paint and range from ⅛ in. to ¼ in. in thickness. They are extremely difficult to apply and for that reason cost considerably more than red lead paint. However, they indicate a better protection and longer life.

Petroleum compounds with proper inhibitors are comparatively easy to apply and in many cases afford very satisfactory protection.

Emulsified asphalts have been used to some extent, but have not proved entirely satisfactory.

Portland cement grout has also been used to some extent and as a rule has proved very satisfactory, being of special value in the case of treating and boiler washing tanks. The mixture used on one road for grout is as follows:

1½ parts by volume portland cement
1 part by volume very fine sand
Water to form thick cream

Failures

The failure of any water-tank, if not principally due to faulty design, can usually be laid to lack of maintenance, although the failures when compared to the large number of tanks in service, are very few. The principal cause of failure is the breaking of hoops on wooden tanks, because of corrosion and to a lesser degree from excessive tension resulting from their being too tight. The deterioration of the tubs of wooden tanks is due chiefly to their not being kept filled with water and to the accumulation of mud in the bottom. The alternate drying and wetting of the top portions of staves not only causes leaks but hastens the decay of the staves. Mud materially hastens the decay in bottom planks and the bottom ends of staves.

Repairs

Ordinary repairs on steel tanks properly designed and maintained by painting as outlined should be very small.

In the case of wooden tanks, the replacement of flat hoops and defective members in the underframe are ordinarily the principal repair items. Defective staves and bottom planks may be replaced by loosening the hoops sufficiently to insert new pieces. Repairs to the underframe can be made by using cribbing, falsework or shoring on which the weight is supported while new members are placed.

Leaks between the staves or bottom planks are best taken care of inside the tub, by caulking in the joint rather than by using a chisel to start a groove on each side of the joint and inserting soft wood wedges in these grooves. No attempt should be made to caulk leaks in the chime as this generally will make them worse or ice will pull out the caulking.

Appurtenances

One of the greatest sources of trouble with the appurtenances of tanks, such as spouts, is lack of lubrication, due chiefly to the fact that adequate means are not provided for the pumper or others to get at the sheaves, etc., for oiling them. It is good practice to furnish ladders at tanks for this purpose and also to furnish pins for sheaves equipped with grease cups.

Indicator cords frequently break and for this reason a small brass chain serves the purpose to better advantage.

Trouble from the rusting of the metal floats can be corrected by using galvanized iron, or better still copper, Cedar pile butts, properly trimmed and painted, furnish satisfactory floats in many cases.

In the colder sections of the country, inspection and maintenance with reference to operation in cold weather is of great importance.

Conclusion

The proper inspection and maintenance of water tanks and their appurtenances depend largely on a competent and inter-

ested supervisory force, combined with a careful programing and budgeting of the work as required.

Discussion

The discussion of this report was confined largely to the description of various expedients for increasing the life of tanks, including the use of cement patches in the bottoms of steel tanks. Questions were also raised regarding the efficiency of cement grout as a paint for use on the interior of tanks, especially in cold climates where the grout was reported to pull away from the metal under wide variations in temperature.

The Modernizing of Station Buildings

F. H. Soothill, chief estimator building department, Illinois Central, Chicago, chairman of the Committee on Modernizing Station Buildings, presented a report which comprised an excellent review of current tendencies in the rebuilding of passenger stations of modern size for the purpose of increasing their attractiveness and better to adapt them to current needs. The following abstract of the report represents a resumé of what the railroads are doing in this regard, but omits considerable material contained in the report with reference to the manner in which the various suggested changes may be carried out:

In remodeling and modernizing an existing passenger station, the type of architectural design to be followed is largely determined by existing construction details of the building to be improved. Ceiling heights, roof lines, doors and windows, etc., are important factors in determining the architectural treatment. Very often, however, community organizations and governing state bodies having jurisdiction over railroad building matters dictate to some extent the size, type and construction which shall be employed. If a particular style of architecture is required for a certain locality, the problem is more difficult. An existing structure may be of such proportions that the cost of alterations to adapt it to a given architectural design or to modern needs would be prohibitive. In such a case it may be advisable, from the standpoint of economy, to erect an entirely new building.

If sewerage and water are available, modern plumbing fixtures are usually installed in a remodeled structure, as most communities now demand modern sanitary facilities. Modern heating systems, such as steam or hot water, usually replace stoves for heating station buildings.

Extensive interior rearrangement is sometimes necessary in order to provide facilities that are adapted to changed traffic requirements. In certain cases the remodeling may involve such heavy expenditures that it will be found advisable to demolish the existing structure and erect a new one.

Among the interesting tendencies in modern passenger station design is the preference for one general waiting room in place of separate waiting room facilities.

Another innovation is that of ticket offices having merely a business counter to separate the ticket seller from the patrons.

The general practice in improving exteriors appears to be evenly divided between covering walls entirely with stucco and applying brick veneer up to the window sill line and stucco between this point and the frieze.

Several railroads have improved brick masonry structures by applying both stucco and brick facings to the exterior. Brick buildings lend themselves readily to stucco exterior treatment without the necessity of incurring expense for additional foundations.

A uniform practice is observed in the replacement of combustible roofing materials with non-combustible materials of the better types in the following order of preference; asbestos shingles, Spanish clay tile, slate and asphalt shingles.

Emphasis can well be given to the importance of installing non-combustible floors and wall bases in all toilet rooms, regardless of the type of floors in the remainder of a structure. Fireproof floors in toilet rooms are a decided advantage from the standpoint of fire protection and also of sanitation and maintenance.

Some railroads in more extensive alteration plans, have applied terrazzo tile floors over a reinforced concrete sub-base, usually supported on the wood floor construction. Other roads have resurfaced existing wood floors with composition flooring, of which several reliable makes are on the market. Composition floors are generally laid monolithic over metal lath secured to the wood floor. Ticket offices usually have maple floors, which material, being resilient, affords comfortable working conditions for employees.

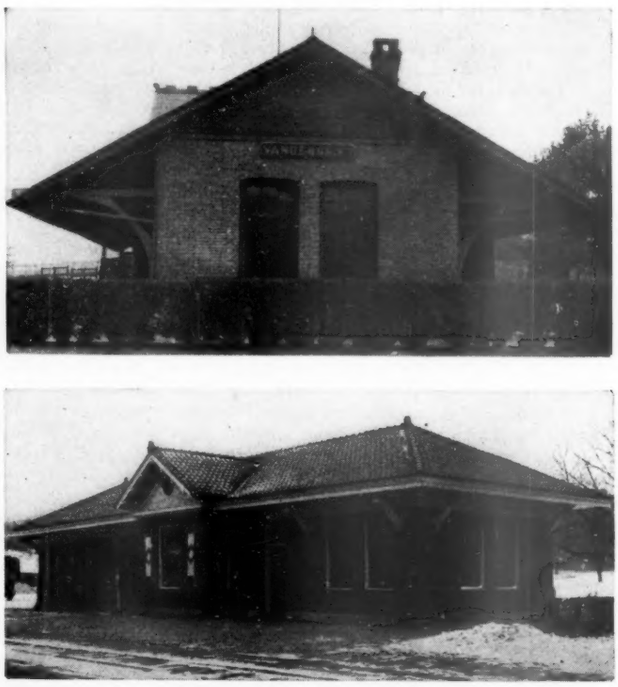
The survey shows that railroads have found it to be of considerable economic advantage to reduce ceiling heights in extensive station-building improvements. By lowering excessively high ceilings the surface area of walls which must be decorated from year to year is reduced materially. This also decreases the volume of space to be heated.

The trend seems to be away from the use of wood lining on the interior of station buildings when improvements are undertaken. In the majority of the cases considered, plaster was used to replace wood ceiling. Several railroads, however, used wall board, in both a wood panel design and a rough texture effect, the latter being obtained through the use of plastic paint.

In practically all the modernized stations under consideration, the sanitary facilities were either installed as new units or, in the case of existing facilities, completely renewed. In practically all of the station improvements considered, the rewiring of the electric lighting system and the replacement of electric fixtures were required.

Cost data submitted by 15 railroads in various parts of the country show that:

For three railroads the investments in remodeled stations were



Above—The Old Pennsylvania Station at Vandergrift, Pa., and Below—The Same Station As It Appeared After Remodeling

less than they would have been if entirely new buildings of similar size and design had been constructed.

For six railroads the investments in remodeled stations were the same as they would have been if entirely new buildings of similar size and design had been constructed.

For six railroads the investments in remodeled stations were more than they would have been if entirely new buildings of similar size and design had been constructed.

After having reviewed the plans and reported costs of the improvements submitted by the railroads, the committee cannot help but feel that a number of the remodeling projects would not have been undertaken if the managements of the respective railroads had known in advance what the actual cost of alterations would be as compared with the cost of constructing new stations.

Of course, the committee appreciates the fact that remodeling might be justified under certain conditions where the demands are for elaborate new facilities. On the other hand, we have reason to believe that in many cases the full extent of the work necessary in rehabilitating old structures is not realized until after the work is authorized.

No general recommendation can be laid down with regard to remodeling or modernizing old buildings, except that in each case under consideration a careful survey should be made, preliminary plans developed and accurate estimates prepared,

both for the work under consideration and for a new building of comparable size and design.

Discussion

It was evident from the discussion of this report that, while many of the members recognized the demand from local communities for the modernization of station buildings, they did not look with favor on the extensive alteration of old buildings, because of the difficulty of determining with any degree of accuracy the full extent and cost of the work to be done. It was evident from the discussion that it had been the experience of many of those present that such rebuilding costs far in excess of the estimates, because of the discovery, when the buildings were opened, of conditions which could not be foreseen.

Maintenance of Turntables and Drawbridge Machinery

A report on the maintenance of turntables and drawbridge machinery was presented by a committee of which A. E. Bechtelheimer, assistant bridge engineer, Chicago & North Western, was chairman. The report was devoted largely to turntables, with a brief reference to drawbridges calling attention to the fact that their inspection is much the same as that for turntables. A brief abstract of the report follows:

All turntables should be given a general inspection at least once each year by a system or district bridge inspector, and also by the division engineer and the bridge and building supervisor or master carpenter, on their respective divisions. These inspections should cover all features relating to the maintenance of the facility, and should be made specifically to determine whether it is being operated and maintained properly.

A monthly inspection should be made by the local bridge and building foreman. This should be a minute inspection of the structure, with special reference to bolted connections, condition of end wheels and bearing boxes, oiling of the center and end wheels, and adjustment of the table with respect to the circle rail and the rails on the table and approach tracks.

The bridge and building supervisor or master carpenter should make additional inspections when reports from the bridge and building foreman indicate that they are necessary. Likewise the system and district bridge inspectors and the division engineer should make additional inspections when reports from the supervisor indicate that they are necessary.

The master mechanic and the roundhouse foreman should keep a close watch on the operation of the turntables at their terminals and report to the division engineer or proper supervisory officer any difficulties coming to their attention.

Turntable Center

The inaccessibility of the working parts of a turntable center is a handicap which seems to invite neglect of the center. It is essential that the working chamber be kept clean and free of water, dust, soot or other foreign matter, and be kept filled with a good grade of lubricating oil.

The table must be lifted and the working chamber opened to insure thorough cleaning. This should be done at least once a year, and at terminals where the service is heavy this should be done every six months. Most types of disc centers can be cleaned reasonably well by flushing with kerosene, but generally the roller type centers cannot be cleaned properly without lifting the table. It would appear that the designers of turntable centers often do not realize the necessity for designs which will permit flushing and proper cleaning without lifting the table.

Some of the defects found in the inspection of roller type centers are broken live rings and radial pins; worn thrust washers; chipped or broken rollers; evidence of unequal bearing over the entire length of the roller, as well as over the entire width of the treads, as shown by checking and flaking of the metal; treads worn level with or below the level of the adjoining surface of the casting; and cracked base castings.

The end bearings of balanced type tables require an unusual amount of attention. In balanced-type tables many designs provide wearing surfaces of steel against cast iron in bearing and in end thrust. These conditions should be corrected by the introduction of bronze bushings in the upper bearing boxes, by putting babbitt in the lower boxes, by increasing the diameter of the shafts, by changing the design of bearing boxes in certain cases, by providing improved oiling facilities, by frequent replacement of the waste packing and careful attention to oiling, and by keeping dust guards in good condition and closed to keep dirt out.

Good support and anchorage of the circle rail should be provided to insure correct surface and alinement and a special effort should be made to keep the rail at the proper distance from the center of the table. These details are of vital importance to the three-point support type of tables.

The Pit

Paving of the pit floor is desirable to aid in keeping the pit free from accumulations of dirt and debris. A paved pit, adequately drained, can be kept clean by frequent flushings with water. Jacking piers of concrete, jacking brackets on the girders, and suitable jacks are requisite to efficient lifting operations. Maximum clearance between the bottom of the table girders and the pit paving is advantageous in affording light for cleaning and proper care of the table, especially where decks are planked solidly.

The three-point support table is far superior to the balanced type table from an operating standpoint. This type of table has been used for the last 15 years by some roads. Many balanced type tables are being converted into three-point support tables, although the cost of this conversion is considered excessive by some roads.

The three-point support installations require a much higher standard of maintenance than the balanced type table has received.

Conclusions

The necessity for a trained organization for the maintenance and care of turntables does not seem to be generally accepted by the railways, in spite of the fact that most roads have trained organizations to look after scales and motor cars. The conclusion of the committees is voiced in the following, which is quoted from one of the replies to the questionnaire:—

"There is no doubt that an organization accustomed to the design, erection and maintenance of turntables can effect great savings to any railroad."

Discussion

In discussing this report several members called attention to the fact that the maintenance of turntables is all too frequently neglected until trouble develops, with the result that the turntable goes out of operation, tieing up the enginehouse and the terminal. Regular careful inspection and oiling were advocated as means to correct this condition. Several members described measures which they had devised to reduce the time that a table is out of service when repairs to the center become necessary. Among these J. P. Hofecker (L.V.) stated that by means of a locomotive crane or a wrecking derrick he has found it possible to lift a table and renew a broken center in as short a period as an hour and 20 minutes.

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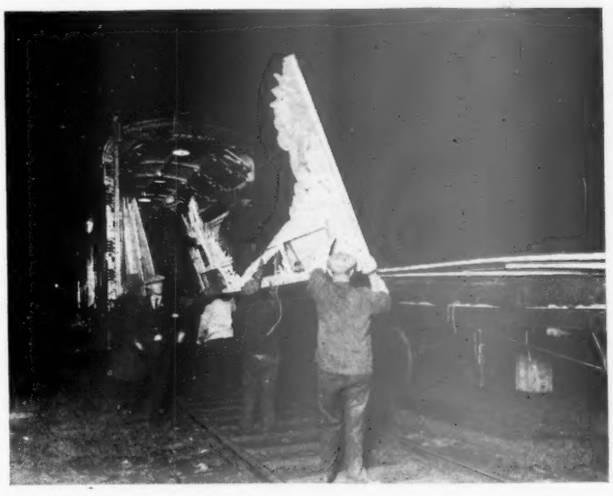
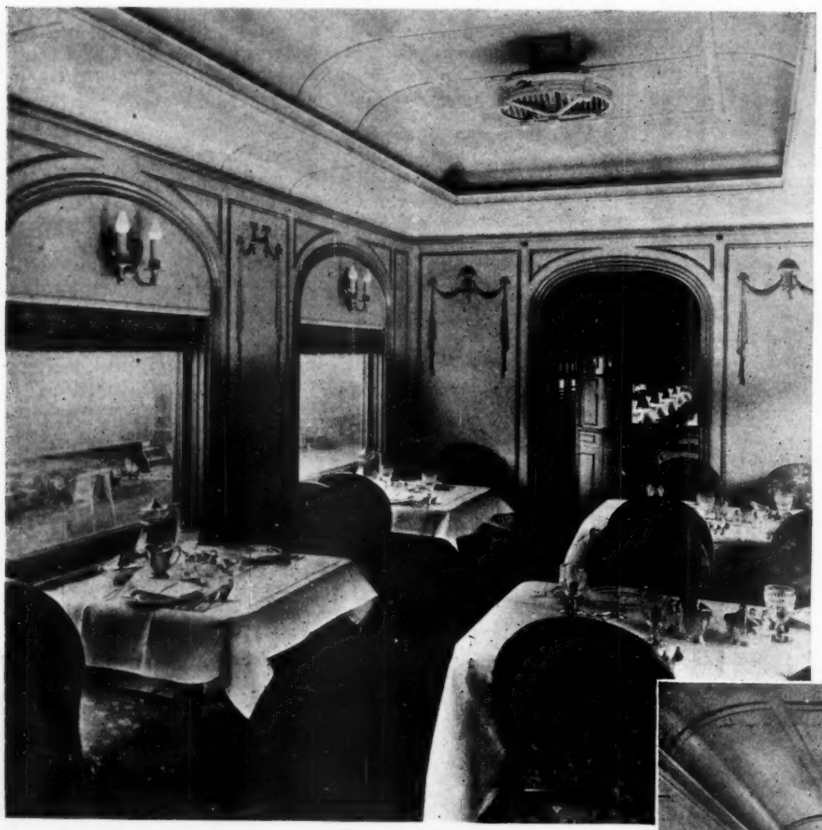


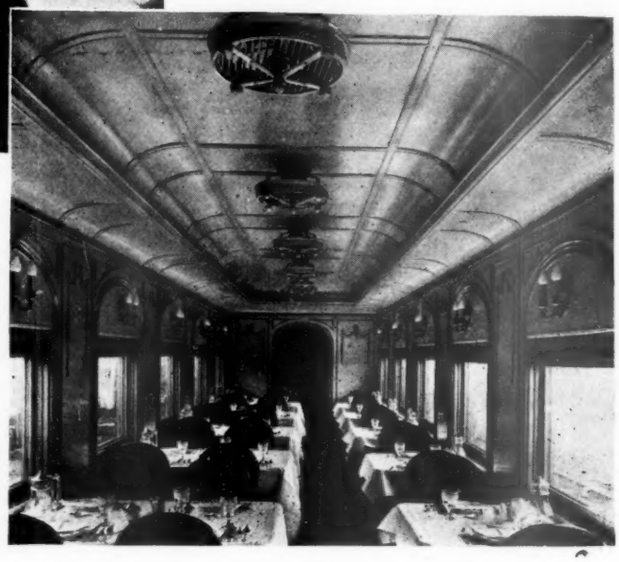
Night Loading of One of the Pennsylvania's New Theatrical Scenery Cars, Named for Famous Actors and Actresses

Artistic and Practical Features Combined in Frisco Diners

Interior treatment patterned after early French period—
Heating units concealed in car walls

THREE dining cars, recently completed for the St. Louis-San Francisco by the Pullman Car & Manufacturing Corporation, include a number of features of more than ordinary interest. Principal among these may be mentioned the artistic interior decoration and equipment, patterned after the early French period. Much of the new passenger equipment, built for and by American railroads in the past year or two, has embodied high standards in artistic effects, comforts and good taste and the Frisco diners are no exception. The cars also include many refinements in mechanical design, the most important of which possibly is the use of radiator heating units of fin tubing concealed in the car walls below the windows and with special arrangements for deflecting hot air against the windows, with a certain proportion liberated at the floor line.





Views of the Frisco Diner Showing Interior Decoration and Equipment Which Includes Aluminum Chairs

General Description

The cars, which have a seating capacity of 36, are of all-steel construction with dummy ends and wide upper deck or clerestory. Their construction embodies cast-steel combined double-body bolsters and platforms.

The insulation consists of a single course of three-ply Salamander for all outside surfaces, including the roof, with an additional course of three-ply insulation on the back of the steel inside finish and two-ply insulation on the back of the ceiling sheets.

The interior finish of the main portion of the car is entirely of steel, with the exception of the buffet, which is of wood and of a design which incorporates the characteristic features of the design of the inside finish used in the dining room. The upper doors of the buffet are wood-paneled instead of the usual art-glass design.

All exposed surfaces of the lockers, ice-boxes, refrigerators, etc., in the kitchen and pantry are faced with polished Monel metal up to the height of the window capping.

The sash, of the Adams & Westlake brass removable type, satin-finished, are double in the dining room and passageway, and single in the kitchen and pantry. Incorporated in the bottom rail of each outside sash in the dining room are two small ventilators with sliding plates to regulate ventilation. Each window in the dining room and passageway is provided with a sliding window screen. The dining chairs are of aluminum of a special design, with box-spring seat construction and upholstered backs.

The cars are heated by the Vapor system of steam heat with thermostatic control. The heating units in the din-

ing room are new in car design. Radiators of fin tubing are applied between the inside and outside walls of the car below the window with a louvered grille in the window capping, permitting the entrance of hot air into the car, with a deflector designed to force the air against the window glass. Small openings are also provided in the finish panels below the windows to deflect a portion of hot air toward the floor line. In the passageway, air heated by the radiators in the walls is emitted through grilles in the finish panels. The heating principle is novel in that the indirect radiation method is used, instead of the usual direct method.

Suitable ventilation is obtained by means of 15 utility exhaust ventilators in the side deck of the car, aided by five ceiling fans in the dining room and four exhaust fans in the kitchen and pantry. Two especially-designed automatic trap ventilators are provided in the roof of the kitchen.

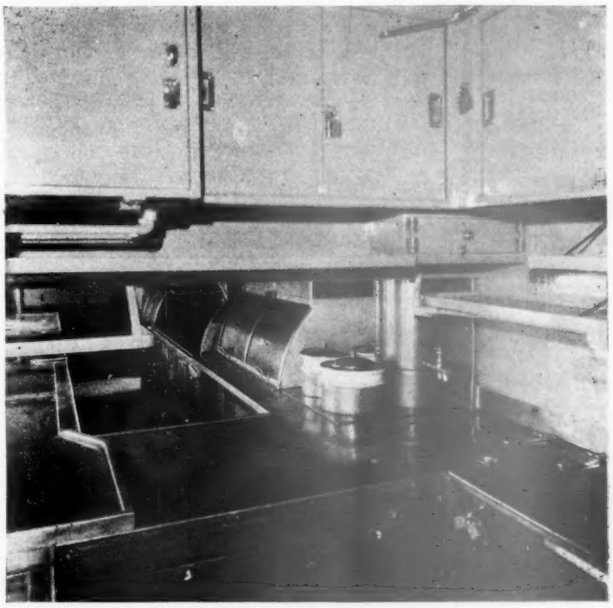
Power for lighting is provided by means of axle generators and batteries, there being two Safety 4-kw. generators and two sets of Gould 450-amp.-hr. batteries. The double set of generators and batteries is necessary to take care of the indirect lighting system in the dining room which consists of 196 standard 15-watt bulbs placed in a highly polished Allegheny steel trough along the sides and ends at the lower edge of the upper deck, the ceiling above these lights being curved to act as a reflector. The bulbs are arranged in four circuits. Additional lighting is furnished by two-light candelabra bracket fixtures of ornamental design, one of which is placed over each dining room window.

The brake equipment is the Westinghouse Universal Control with double 16-in. cylinders, and with Simplex clasp brakes on each truck. The trucks are of the Commonwealth, cast steel, six-wheel, drop-equalizer type with outside side bearings and with pedestals cast integral with the truck side frames. The journals are A.R.A., 5½-in. by 10-in., with friction bearings. The cars are finished on the exterior with the Duco lacquer system.

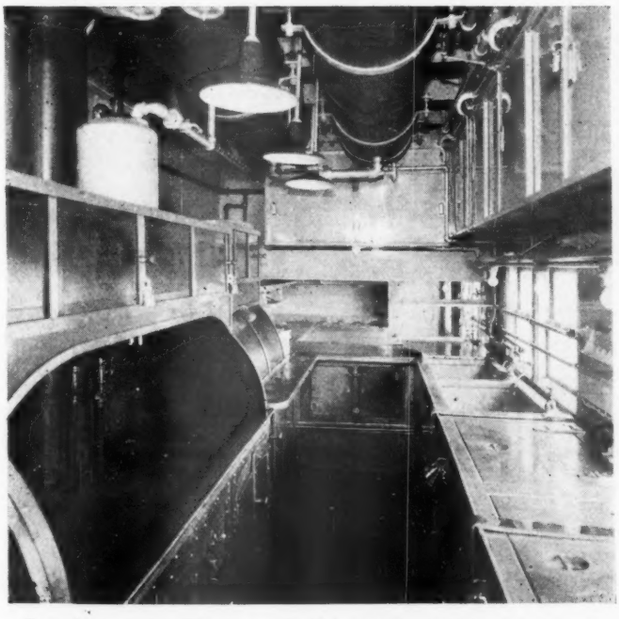
Interior Decorative Treatment

To transplant the delicate and formal feeling of the architecture in vogue at the time of the old French kings, particularly Louis XVI, into a modern steel dining car would appear difficult, yet this was done on the Frisco diners. The resultant effect is a most artistic and restful interior.

The architecture of the interior was carefully executed so that all details pertaining to both structure and decoration would conform to period. The window frames are carried the full height of the side finish, and the top portions of the window frames are arched, conforming to the rather flat curves characteristic of the Louis XVI period. The carrying of the window frames to this height makes it possible to have long, narrow panels between each window, and give a decided effect of height to the room. The upper parts of the door openings were also curved, and, together with beautifully-proportioned panels on either side, give the ends of the dining room a striking effect. A semi-arched ceiling is used, the arch starting at the deck-rail molding and carrying well into the ceiling proper. The flat surface of the ceiling is attractively paneled, and the general effect seems to be that the ceiling grows out of the side finish and is a distinct part of the car, rather than just a ceiling.



Details of the Pantry



Interior of the Kitchen—Polished Monel Metal is Used Up to the Window Capping

Three basic colors are used for the interior painting. The sides and ends of the dining room proper are painted a beautiful shade of soft sea green, the moldings and paneling on the side finish and bulkheads are in a slightly darker color of the same general tone, and the ceiling is painted in a delicate shade of old ivory. The lobby at the buffet is given the same treatment as the dining room and blends so well with the dining room proper that it seems a part of it rather than another part of the car, which is often the case.

The formal aspect and dignity of the car is enhanced by the decorations and lighting fixtures. In each of the panels in side finish is placed a cast decoration in relief, the top of which consists of three small medallions with ribbons on either side, joined together by delicately modeled chains of flowers tinted by hand in their true colors. The sides of the decorations or drops, are drapery-like in effect, with painted gold fringe, gold cords and tassels at the bottoms. The same type is used on either side of the door openings except that these have as their central motif a small basket of fruit tinted in natural colors, and, like the side finish decoration, joined to the drops by chains of flowers.

The two-light wall brackets were especially created for these cars in a decidedly French tone. They are placed in the panels above each of the windows and are finished in an antique gold plate, harmonizing beautifully with the delicate green background of the walls.

The fact that the effect is gained with the architecture and decoration leaves the fabrics and carpet with a relatively small part to play, in so far as color was concerned. The window shades and carpet were carefully chosen with this in mind, the carpet being of soft green with an indistinct two-tone pattern with an occasional small touch of rose color. The window shades are also a two-tone green with touches of rose to give warmth, both carpet and window shades blending quietly into their backgrounds. A decidedly new note of color was introduced into the cars by the chairs and chair covering. The chairs, of oval-back type, are upholstered in an interesting fabric of the French "Mille fleurs," or small detached floral pattern, with gay little groups of flowers in soft colors standing out from a brown or walnut-colored background, giving to the whole room a slightly contrasting color and accentuating the softness of the wall colorings and delicate tints in the wall decoration.

Taxpayers, As Well As Railways, Are Victimized

(Continued from page 972)

The railroads are facing new and serious problems of the kind that I have been referring to, and time and study will be necessary to work them out. Ways must and will be found to reduce the cost of transportation by rail. Methods must be adopted to make transportation by rail increasingly satisfactory. In just what ways the necessary economies will be effected, no man can definitely say at this time, but there will undoubtedly be opportunity for substantial economies if the policy of consolidation of railroads, as set forth in the Transportation Act, is carried out in harmony with the spirit of the Act. The economies so to be realized will not be immediately effective in full and they ought not to be immediately effected because of the injury to the railroad employees and others which might follow any sudden and radical change or readjustment, but that does not mean that the economies incident to consolidation and more effective co-operation may not be realized within a reasonable period of time. In the meantime shippers, regulating agencies and others interested in the problem should realize that because of the conditions which I have briefly enumerated, the railroads are facing a problem which calls for the most intelligent efforts on the part of railway managers and staff, and a certain amount of patience should be exercised while the answer to the problem is being found.

The Challenge to Legislators, Employees, Regulatory Authorities and Executives

When during the coming winter our representatives in Congress are called upon, as they doubtless will be, to consider legislation affecting the railroads, we and they must give serious thought to the national policy with respect to transportation. What forms of transportation are best adapted to the needs of the American people, and how may we be assured of future development adequate to those needs? Should the railroads of the country be regarded as so many independent units, or as comprising a national system of railroad transportation as contemplated in the existing Transportation Act? Upon the correct answers to these questions should be based all constructive legislation. I cannot believe that an agency which has contributed so much toward the development of our country as has the railroad, has now reached the point where it can be and should be discarded. The situation, however, presents not only to legislators, but to railway managers and railway employees in every rank and grade of the service, a challenge which calls for the best that they have to give, and I do not doubt that it will be successfully met.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended October 25 showed an increase of 28,250 cars as compared with the week before, to a total of 959,335 cars. This was a reduction of 175,025 cars as compared with the corresponding week of last year and a reduction of 203,639 cars as compared with 1928. All commodity classifications and all districts showed reductions as compared with other years. The increase as compared with the week before was largely due to an increase of 32,000 cars in coal loading, which was relatively light in the week ended October 18, which included a holiday in some sections. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading

Week Ended Saturday, October 25, 1930

Districts	1930	1929	1928
Eastern	209,329	245,706	260,074
Allegheny	182,121	226,861	233,259
Pocahontas	57,021	65,848	65,124
Southern	138,538	157,202	159,746
Northwestern	135,522	159,694	170,487
Central Western	157,533	179,965	180,343
Southwestern	79,271	99,084	93,941
Total Western Districts	372,326	438,743	444,771
Total All Roads	959,335	1,134,360	1,162,974
Commodities			
Grain and Grain Products	41,517	43,013	53,070
Live Stock	35,361	38,772	38,019
Coal	192,104	204,447	207,688
Coke	9,218	12,025	10,546
Forest Products	38,929	62,634	67,600
Ore	35,968	50,228	59,389
Merchandise L.C.L.	240,008	270,414	270,020
Miscellaneous	366,230	452,827	456,642
October 25	959,335	1,134,360	1,162,974
October 18	931,085	1,185,564	1,163,135
October 11	954,874	1,179,540	1,190,741
October 4	972,492	1,179,947	1,187,032
September 27	950,381	1,203,139	1,196,965
Cumulative total, 43 weeks	38,976,434	44,599,437	42,928,644

The freight car surplus for the period ended October 23 averaged 401,659 cars, an increase of 5,368 as compared with the preceding week. This included 223,660 box cars, 130,623 coal cars, 22,425 stock cars, and 5,907 refrigerator cars.

Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended October 25 totaled 68,327 cars, an increase of 3,170 cars over the previous week but a decrease of 9,577 cars from the same week last year.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada		
October 25, 1930	68,327	32,265
October 18, 1930	65,157	32,302
October 11, 1930	71,279	33,561
October 26, 1929	77,904	40,318
Cumulative Totals for Canada		
October 25, 1930	2,651,645	1,439,667
October 26, 1929	2,977,770	1,776,980
October 27, 1928	3,001,015	1,695,425

Maintenance Work To Be Charged To Suspense Account

WASHINGTON, D. C.

ONE method by which railways may contribute to the efforts being made to relieve the unemployment situation by performing maintenance work which would otherwise be postponed on account of the depression and the falling off of railway traffic is afforded by an order just issued by the Interstate Commerce Commission on an application made by the Chicago & North Western. Under the authority of the order that company will be enabled to re-employ some 1,700 men in heavy repairs to cars and locomotives not in service, at a cost of about $500,000, during November and December, and to postpone the charge to operating expenses until the equipment is returned to service. The amount will meantime be charged to a suspense account so that it will not affect this year's showing of expenses and net earnings.

While the order as issued, temporarily waiving the requirements of the commission's accounting rules, applies only to the North Western, stating that "the facts submitted by the carrier with respect to its desire to relieve in so far as it can the present grave situation with respect to unemployment justify the accounting proposed," it is assumed that the commission, upon proper showing of the facts, would grant similar authority to other similarly situated roads applying for it that could make the necessary showing. Up to date it is understood that no other road has applied for similar authority, but certain railway supply interests have been urging on railway officers the idea of doing as much as possible toward stabilizing their maintenance work and thereby promoting employment both of railway maintenance forces and those of the industries which supply the materials involved. This would apply to railway maintenance work the idea of the "buy now" slogan which is being so actively urged in many quarters, and to this end the suggestion has been advanced that the commission might modify its accounting requirements. While the commission has not modified its usual rules it has, in the North Western case, it is suggested, pointed out one method of stabilizing by doing work in a period of depression and unemployment which would otherwise not be done until a more prosperous period.

The subject of stabilizing railway employment has long been under discussion and some progress has already been made by railways in maintaining a more even distribution of work throughout the year. Railway officers have, however, pointed to the difficulty of stabilizing as long as they are so regulated as to be unable to accumulate in prosperous years sufficient reserve to be able to avoid the necessity for drastic curtailment of expenses in the lean years. During the first eight months of this year railway expenditures for maintenance were 12.6 per cent less than in the corresponding period of last year and in August they were 22.7 per cent less than in August, 1929, while in August the number of maintenance employees was 163,904 less than in August of last year.

The North Western advised the commission that it desired to relieve the acute unemployment situation at Chicago and other cities on its line by re-opening shops and re-employing some 1,700 men in heavy repairs to freight cars and locomotives and asked that it be permitted to charge to suspense account until 1931 approximately $500,000 for the purpose. The order, issued by Division 4 of the commission, on October 29, provides:

"That the Chicago & North Western Railway Company may charge to account 727, 'Other unadjusted debits,' not to exceed $500,000.00 to be expended for labor and material during November and December, 1930, in repairs to equipment not in service, the amounts so charged to be cleared from suspense by charges to operating expenses as the repaired equipment is returned to service, but not later than the close of the year 1932.

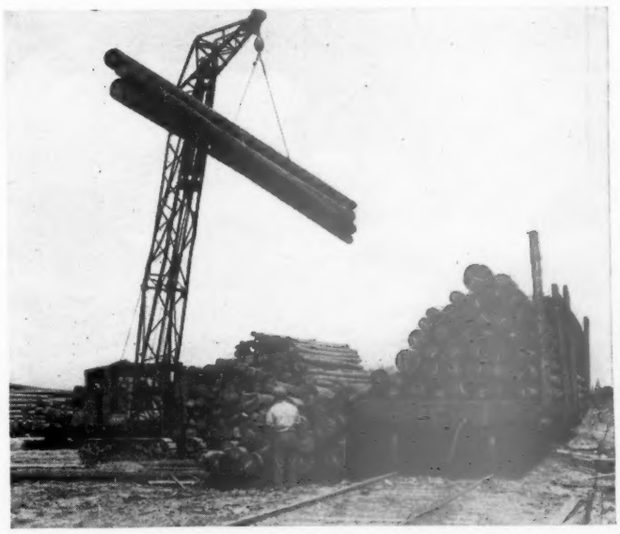
"It is further ordered, That the said Chicago & North Western Railway Company shall make such reports to the Commission through its Bureau of Accounts as that bureau may require to confirm the accounting herein authorized."

Crane for Handling Poles

A SPECIAL crawler-type crane, known as the P. & H. pole-handling crane, has been developed by the Harnischfeger Corporation, Milwaukee, Wis., to meet the need for a speedy efficient machine for "decking" poles into stacks.

In a typical application of this labor-saving machine the poles are received at the yard on flat cars, from which they are rolled to the ground. The crane, which is equipped with a goose-neck boom, then picks up five or more poles and either swings around, or travels to the proper stack, where it places the poles as desired. Where it is not practicable to travel back and forth with the crane, the second cable of the machine can be used to skid the poles along the ground from the unloading location to the proper pile.

The crane can travel from job to job independently of railroad tracks, and, having a short tail-swing, requires very little operating room. It is powered by a gasoline motor which is especially designed for the fast working speeds and heavy lifting capacities needed for this kind of service. Since it is mounted on a tractor it can be used in place of a locomotive crane for many duties in and around a yard. Through the application of certain accessory attachments this crane may also be employed either as a shovel, dragline or ordinary crane.



Mounted on a Tractor, and Fitted with a Goose-Neck Boom, This Crane Is Well Adapted to the Work of Decking Poles

Looking Backward

Fifty Years Ago

Track laying on the Southern Pacific is progressing eastward at a remarkable rate. On one day in October 13,800 ft., or 2.61 miles, were laid, and on the following day 14,200 ft., or 2.69 miles. The road has now reached a point some 30 miles within New Mexico, and doubtless before the end of this year will have reached the border of Old Mexico at El Paso.—*Railway Age,* November 11, 1880.

The intention of Jay Gould and his associates to secure a new connection for the Union Pacific with the Pacific coast is about to be put in effect. A third rail is to be laid on the Utah & Northern, a narrow gage line, from Ogden, Utah, northward 40 miles, from whence a standard gage road is to be built, within 18 months, to Boise City [now Boise], Idaho, about 250 miles from Ogden. This will leave a gap of only about 100 miles to Baker City [now Baker], Ore., the point to which the Oregon Railway & Navigation Company [now the Oregon-Washington Railroad & Navigation Company] line is to be extended within about the same time.—*Railway Age,* November 11, 1880.

The war in passenger rates between the Chicago roads has broken out again, and rages with more bitterness than before, although no unlimited tickets are now sold at reduced rates. The fare between Chicago and St. Louis, by either the Chicago & Alton, the Illinois Central or the Wabash, is $1; between St. Louis and Kansas City it is the same; while $1 will also carry a passenger from Kansas City to Chicago. This new outbreak seems to have resulted from a serious misunderstanding between the railroad presidents as to what was actually agreed upon in the meeting held in New York, October 20, 21 and 22. The president of the Wabash claims that it was agreed that his road should have one-third of the passenger business between Chicago and St. Louis. Representatives of the other roads deny that such a division was a part of the agreement.—*Railway Age,* November 11, 1880.

Twenty-Five Years Ago

Reports made by the railroads to the Interstate Commerce Commission in connection with its inquiry as to the propriety of increasing the minimum percentage of air brakes to be used in freight trains show that 88.05 per cent of the railroad-owned freight cars in the United States are now equipped with air brakes. Only four roads owning 10,000 or more freight cars reported that 100 per cent of them were equipped with air brakes.—*Railroad Gazette,* November 10, 1905.

On December 1 the Chicago & North Western, the Union Pacific and the Los Angeles & Salt Lake will place in service a new train—the Los Angeles Limited— which will be operated daily between Chicago and Los Angeles, Cal. Ten complete trains of the latest pattern will make up the equipment, each train consisting of four standard Pullman sleeping cars, one tourist, one baggage, one buffet and one observation car. The North Western began operation on November 7 of a new electric-lighted train—the North Western Limited—between Chicago and St. Paul and Minneapolis.—*Railway Age,* November 10, 1905.

Ten Years Ago

Julius H. Parmelee, chief statistician of the Bureau of Railway Economics at Washington, D. C., has been appointed director of that organization. T. E. Brooks, division superintendent on the Louisville & Nashville at Birmingham, Ala., has been promoted to assistant general manager at Louisville, Ky.—*Railway Age,* November 5, 1920.

The American Railway Association will at once take another letter ballot on the question of advancing the per diem rate charged by the railways for the use of one another's cars from 90 cents to $1 per day. Recently the proposal to advance the per diem rate from 90 cents to $1.10 was turned down by a ballot among the railways.—*Railway Age,* November 5, 1920.

New Books

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

City Noise. Report of the Commissioner appointed by the New York Commissioner of Health, Dr. Wynne, to study noise in New York City and to develop means of abating it. The chapters on what noise does to us, noise measurement and noiseless progress may be of interest. Illustrations and charts. 308 p. Pub. by Noise Abatement Commission, Department of Health, New York City.

One Hundred Years of Railways, by C. F. Dendy Marshall. "From Liverpool and Manchester to London, Midland and Scottish." Illustrated. 60 p. Pub. by The London, Midland & Scottish Railway Company, London, England. 1 shilling.

Quantity of Wood Treated and Preservatives Used in the United States in 1929, by R. K. Helphenstine, Jr. 38 p. Pub. by Forest Service, U. S. Department of Agriculture in co-operation with American Wood Preservers Association, Washington, D. C. Apply to either.

Railway Accounts—Their Statutory Form and the Practice of Railways to Give Effect Thereto, by C. H. Newton. The author is Chief Accountant, London & North Eastern Railway. "Written primarily for students, and those directly concerned in railway accounting, it is hoped this work may be of use also to a wider circle, embracing those members of the public who take an interest in the financial aspect of railway operation." Preface, p.v. 245 p. Pub. by Sir Isaac Pitman and Sons, Ltd., London, England. 10 shillings, sixpence.

Tensile Strength of Threaded Bolts, by R. P. Davis and L. V. Carpenter. Report of tests on bolts up to one inch diameter, which show that the strength, based on the area at the root of the threads, is much higher than has been generally assumed and indicate that current specifications are unduly conservative. Bul. Series 16 No. 1. Published by West Virginia University, Morgantown, W. Va. 12 p.

Periodical Articles

The College Mind—The Opening Address of Dartmouth's 162d Year, by President E. M. Hopkins. Discussing the old culture and the new President Hopkins said, among other things: "There are built and building in this country in these modern days great bridges as beautiful as anything wrought by the hands of men and there are railroad terminals as inspiring as cathedrals of old. . ." p. 11. Dartmouth Alumni Magazine, November 1930, p. 9-12.

Design of the World's Fair Building, by Clarence W. Farrier and Bert M. Thorud. Description of new type of construction evolved for the Chicago World's Fair in 1933. ". . . A third element of the building [i.e. Travel and Transport Building] is a very large room in which the director wanted to show locomotives. . . The natural habitat of the locomotive at rest is in a roundhouse and it was desired to reproduce inside this building a roundhouse where the locomotives could be viewed . . ." p. 386. Construction plan outlined on pages 386-387. Journal of the Western Society of Engineers, October 1930, p. 384-394.

Report of Railroad Securities Committee, Investment Bankers Association of America. A summary of conditions affecting railroad finances. Commercial and Financial Chronicle, November 1, 1930, p. 2771-2772.

This Thing Called Research, by Charles F. Kettering. The author is General Director, General Motors Research Laboratories. "There is one thing that I believe should be especially stressed as the basis of industrial research—a healthy dissatisfaction with what we have. . ." p. 8. Executives Service Bulletin, October 1930, p. 1-2, 8.

Odds and Ends of Railroading

Better Halves

Feeling that the women who put up with railroaders for 50 years or more were entitled to unlimited credit, the Union Pacific recently awarded gold pins to 11 wives of railroaders who had been in U. P. service 50 years or more.

5,555

Here is the long arm of coincidence: At a London terminal station of the Southern Railway a passenger applied for a first-class ticket at 5 minutes to 5 o'clock last evening for the 5.5 p.m. train. The fare was 5s. 5d. and the ticket numbered 5,555.—News Chronicle, London.

One-Way Ticket to Hall of Fame

Richard A. Stanley, traveling freight agent for the Louisville & Nashville, with headquarters at Anniston, Ala., sank his tee-shot recently on a 138-yd. hole at Chattanooga, Tenn. Stanley modestly disclaims all credit, stating that his wife, a native of Glasgow, brought back the mashie that did the work, on her return from a recent visit to Scotland.

Believe It or Not

In far-off Singapore was made an experiment in noise reduction upon the rail lines operated by the Federated Malay states. In order to deaden the noises and reduce vibrations incident to operation of trains, specially prepared rubber plates were placed between the rails and ties. The test was confined to a short stretch of line, but was attended with so much success that a much longer distance will be rubberized.

I. C. Chorus Wins

In the recent contest sponsored by the Chicago Tribune and other newspapers and known as the Chicagoland Music Festival, the Illinois Central Male Chorus of Chicago won first place in the men's chorus competition. As a reward for winning this honor, each member of the chorus was presented with a gold medal by the Chicago Tribune. The entrants in this contest came from Illinois, Wisconsin, Indiana, Iowa and Michigan.

A Fast Run

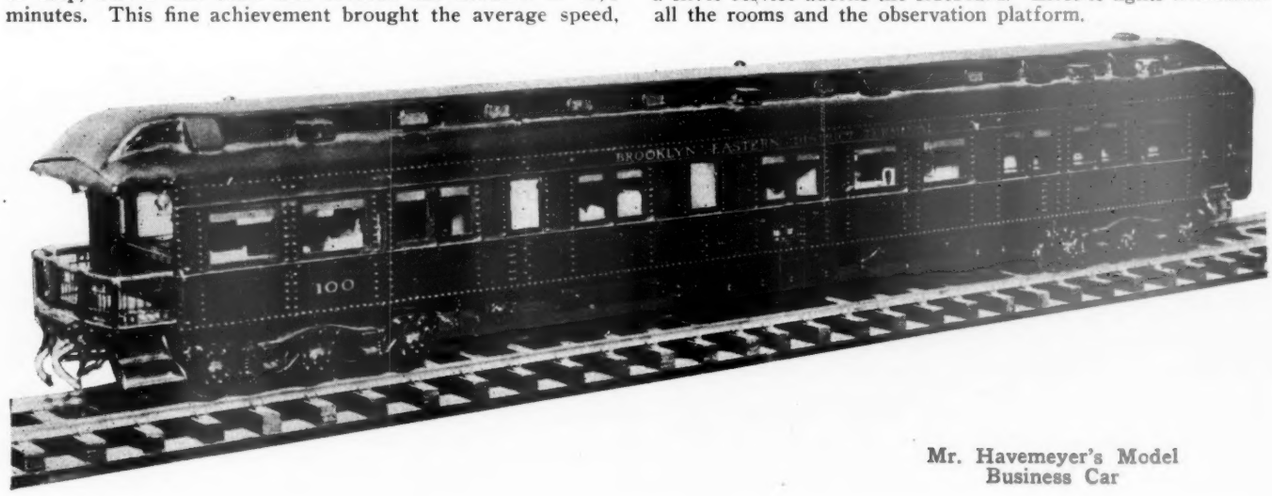
A remarkable feat took place on the Great Western last Saturday when the "Cheltenham Flyer," booked to run the 77.3 miles from Swindon to Paddington in 70 minutes, start to stop, had a late start and covered the distance in 65½ minutes. This fine achievement brought the average speed, start to stop, from 66 miles to 71 miles an hour, and was even more remarkable than appears at first sight, as a signal check at Iver brought the speed for a short distance down from 80 to 53 miles an hour. Fifty consecutive miles were run at an average speed of 78 miles an hour, while a speed of 82 miles an hour was maintained for several miles near Didcot. The engine was not one of the latest type "Castles," which are usually employed on this service, but was one of the 25-year-old two-cylinder "Saints," No. 2917, Saint Bernard, and the run was a splendid effort for such a veteran.—London Times.

A Bill Clerk's Nightmare

The lack of originality displayed in naming towns plays no small part in the number of shipments going astray. Supposing, for example, that a shipment is destined to a station called Summit. There are 92 such stations to choose from. Some states have as many as five Summits. Then there are 44 Riversides, 38 each named Williams and Wilson, 36 named Oakland, 35 each named Midway and Franklin, and 34 each named Clifton, Marion and Adams. Hamilton and Anderson are popular names too, with 33 stations. Included among the other names of stations that recur 30 or more times on the railways of this country are: Davis, Florence, Greenwood, Harris, Taylor and Walker, each with 31; and Arlington, Fairview, Miller and Nelson each with 30. Thus 784 cities, towns and villages have to get along with only 18 names among them. In addition, there are more than 50 names which recur 20 or more times in various parts of the country. With no limitations on the names from which to choose, it would seem that our town christeners were, on the whole, surprisingly lacking in imagination.

Believe It or Not

Henry O. Havemeyer, Jr., assistant to the president of the Brooklyn Eastern District Terminal won a silver cup at the exhibition of the New York Society of Model Engineers, with his model of a business car. Its building occupied 14 months of his spare time. The tiny car is 41¼ in. long, 5¼ in. wide and 7 in. high. It is built with ribs, double walls and individual panes of glass. A fish-belly underframe is used, with all boxes, tanks and piping included, and the trucks have roller bearing boxes. The interior is divided into a lounge, two bedrooms fitted with brass beds and separated by a shower bath, a dining room, secretary's room, porters' room and kitchen. The interior finish is jade green Duco, with flowered designs on the walls, and all the rooms are fitted with the proper equipment; the dining room table is set with the proper silverware, while a silver service adorns the sideboard. Electric lights illuminate all the rooms and the observation platform.



Mr. Havemeyer's Model Business Car

NEWS

Barge Service Extension Opposed by Southern

Road files statement of "Comments" on Inland Waterways application

The Southern has filed with the Interstate Commerce Commission a statement of "comments" on the application of the Inland Waterways Corporation for a certificate authorizing operation of barge service on the Illinois river and for an order directing the railroads to join with it in establishing joint rates and routes.

In asking the commission to dismiss the application the Southern says in part:

"* * * Neither the present nor the future public convenience and necessity require the operation of the Inland Waterways Corporation on the Illinois River; the proposed water line would open up no new territory; it would create no new or additional traffic, but would depend upon tonnage which it would take away from the rail carriers; there are at present numerous lines serving the territory involved adequately and efficiently, and these lines are not only handling promptly all traffic now being offered, but they need greatly increased tonnage which they could move without placing any burden upon existing facilities; the through routes and joint rates sought are not necessary or desirable in the public interest; and the operation of the proposed line would tend to impair the ability of existing lines to serve the public and the immediate territory proposed to be invaded; if certificate of public convenience is granted and through routes and joint rates are ordered by the commission, the differentials under the all-rail rates should be much less than those sought by the applicant because such differentials, if established, would result in applicant having a complete monopoly to the exclusion of the all-rail routes, with respect to all traffic which it desires and has available vessels to transport.

"The difficulties which the rail carriers are experiencing at this time are due primarily to a lack of traffic. * * * It is impossible for the rail carriers to successfully compete with the government owned and subsidized barge line. With the 20 per cent differential under the all-rail rate, the barge line has an advantage which the rail carriers cannot overcome. * * *. There is not the slightest doubt that this commission would promptly deny an application for a certificate of public convenience and necessity to construct a new all-rail line designed to reach the territory which the Inland Waterways Corporation now proposes to invade. There is no more need for a new water line than there would be for a new all-rail line."

Southwestern Lines Ask Reconsideration of Grain Rate Case

The southwestern railroads have filed with the Interstate Commerce Commission a separate petition for a rehearing and reconsideration of the commission's order requiring a downward revision of western grain rates, following the petitions filed by the western roads generally and the Pacific coast and northwestern roads. They assert that the rate level prescribed for the Southwest is far below that sought or contended for by any party to this proceeding and that the past and present condition of the roads have not been such as to justify such a drastic reduction in grain rates, which is described as a "staggering blow to the revenues of the southwestern carriers."

Part Time Hours at a Highway Crossing

The Erie, responding to the appeal of the Westinghouse Electric & Manufacturing Company, has provided additional protection at Favor street crossing in Attica, N. Y., notwithstanding the fact that, according to the railroad company's view, the crossing is a private one, not public. Over this crossing nearly all of the 225 employees of the Westinghouse plant have to pass to and from their work, and application was made to the State Public Service Commission to require additional protection. Following negotiations between the railroad and the manufacturing concern, it was decided to have a watchman at the crossing six days a week for eight hours a day; and the Public Service Commission dismissed the complaint without deciding whether or not the crossing should be classed as a public way. The watchman is to be on duty from 6:45 a. m. to 9:45; from 11 a. m. to 2 p. m. and from 4 p. m. to 6 p. m.

Clerks' Union Attacks "Unfair Competition"

Urge direct action to prevent serious injury now threatening railways

Direct action to prevent the serious injury of the railway transportation system now threatened by "unregulated and unreliable transportation agencies" is urged by the Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees, in a resolution adopted at a conference of general chairmen of the organization in St. Louis, Mo., on October 27. Determination of the true cost to the public of the highways used by motor trucks and motor coaches, regulation of motor transport services, extension of principles underlying railway labor laws to cover operators of motor vehicles, and regulation of freight forwarding companies, are urged by the clerks' brotherhood.

The resolution follows:

"Forty years of development on our steam railroads under government regulation has resulted in our having today a transportation system of unequaled efficiency, fully competent to handle the needs of the country. This efficient medium of transportation is today threatened with serious injury due to the growth of certain unregulated and unreliable transportation agencies. In particular, motor trucks and motor coaches have been growing more numerous on our highways. Their unregulated operation threatens to undermine the efficiency of the established transportation facilities and also endanger the lives and the property of the general public using the highways. Freight forwarding or consolidating companies, likewise economically unsound and unregulated by governmental agencies, constitute a serious threat to the maintenance and continued development of our steam railroad systems. Inland waterways, while in many instances, doubtless, a worth-while adjunct of the transportation facilities of the nation, in many cases are being developed, and public funds are being spent recklessly in their improvement, as a means of advancement for "pork-barrel" politicians. In so far as these developments are economically unsound, they will unquestionably prove to be transient. However brief their existence may be, they would certainly impair the usefulness of our railroad system.

(*Continued on page 1009*)

Nine Months Net Down 31.5 Per Cent from 1929

Return of 3.54 per cent compares with 5.29 in same period last year

Class I railroads for the first nine months this year had a net railway operating income of $659,427,561, which was at the annual rate of return of 3.54 per cent on their property-investment, according to reports compiled by the Bureau of Railway Economics. This was a decrease of 31.5 per cent as compared with the nine months of 1929, when the net railway operating income was $962,-854,453 or 5.29 per cent. Operating revenues for the nine months totaled $4,082,725,729, compared with $4,781,684,-238 for the same period last year, or a decrease of 14.6 per cent. Operating expenses $3,052,543,100, compared with $3,419,397,035, a decrease of 10.7 per cent.

The roads in the first nine months of 1930 paid $276,892,644 in taxes, compared with $308,953,847 for the same period last year, a decrease of 10.4 per cent. For September, the tax bill amounted to $31,989,991, a decrease of $6,273,995 under that of September the previous year.

Seventeen Class I railroads operated at a loss in the nine months of 1930, of which six were in the Eastern district, two in the Southern and nine in the Western.

Net railway operating income by districts for the first nine months of 1930 with the percentage of return based on property investment on an annual basis was as follows:

		Percent
New England Region	$ 32,241,151	4.73
Great Lakes Region	107,132 543	3.21
Central Eastern Region	146,038,676	3.68
Pocahontas Region	61,877,498	7.41
Total Eastern District	347,289,868	3.93
Total Southern District	63,354,617	2.63
Northwestern Region	67,937,905	2.86
Central Western Region	121,781,241	3.65
Southwestern Region	59,063,930	3.54
Total Western District	248,783,076	3.37
Total United States	$659,427,561	3.54

For September the net operating income was $104,078,334, or at the annual rate of return of 3.29 per cent on property investment. In September last year, this was $134,345,887 or 4.35 per cent. The decrease was 22.4 per cent. Operating revenues for the month amounted to $467,468,609 compared with $567,364,920 in September last year, a decrease of 17.6 per cent. Operating expenses, $320,-131,007 compared with $383,858,630, a decrease of 16.6 per cent.

The Eastern district for the first nine months reported a net of $347,289,868; annual rate 3.93 per cent. For the same period in 1929, the net was $500,738,330, or 5.81 per cent. Operating revenues for the nine months, $2,041,815,658, a decrease of 14.6 per cent; operating expenses, $1,517,036,406, a decrease of 10.8 per cent.

In the Southern district for the nine months, the net was $63,354,617; annual rate 2.63 per cent. For the same period in 1929, it was $101,000,304; annual rate 4.24 per cent. Operating revenues for nine months $492,693,648, a decrease of 15.3 per cent; operating expenses $389,-407,350, a decrease of 11 per cent.

The Western district for the nine months had a net of $248,783,076; annual rate, 3.37 per cent, compared with net $361,115,819, and a rate of 5.02 per cent. Operating revenues for the nine months, $1,548,216,423, a decrease of 14.4 per cent; while operating expenses, $1,146,099,344, a decrease of 10.6 per cent.

CLASS I RAILROADS—UNITED STATES

	Month of September 1930	1929
Total operating revenues	$467,468,609	$567,364,920
Total operating expenses	320,131,007	383,858,630
Taxes	31,989,991	38,263,986
Net railway operating income	104,078,334	134,345,887
Operat. ratio-per cent	68.48	67.66
P.c. return on property investment	3.29	4.35

Pennsylvania Drawbridges Put in Service

The Pennsylvania has this week completed the construction of two new vertical lift bridges over the Hackensack River between Marion, N. J., and Kearny, four miles west of New York City, on the old line between Jersey City and Manhattan Transfer. These bridges, taking the place of turn-table draws, and costing about $9,000,000 have been under construction for the past two years. The bridge carrying the passenger tracks was opened on November 2, and the freight bridge on November 4.

C. P. R. Net Up 1.7 Millions in September

The September earnings of the Canadian Pacific show the large increase of $1,721,645 in net revenue on a comparison with September of last year. Following a long series of declines, the August statement showed an increase of $388,376 on a like comparison, and the road's ability to record these increases at the present time should be regarded as very encouraging.

Gross earnings for the month were $19,192,325, against $19,551,217, a decrease of $358,891, while expenses were cut in the same period, $2,080,537, leaving net operating revenue $6,732,265, against $5,010,619 in September of last year. For the nine months gross earnings were $132,682,160, a decrease of $25,256,925, while expenses were cut $19,736,570, leaving the nine months net at $22,611,433, against $28,131,789 in the like period of last year.

The following table shows the earnings, expenses and net for the month of September, and for the nine months of the fiscal year ended with September:

SEPTEMBER	1930 $	1929 $	Incr. $
Gross	19,192,325	19,551,217	* 358,891
Exp.	12,460,060	14,540,297	*2,080,537
Net	6,732,265	5,010,619	1,721,645

NINE MONTHS ENDING SEPTEMBER	1930 $	1929 $	Incr. $
Gross	132,682,160	157,939,086	*25,256,925
Exp.	110,070,726	129,807,296	*19,736,570
Net	22,611,433	28,131,789	*5,520,355

* Decrease.

Privately-Owned Line Begins Barge Services

Operations between Cincinnati and New Orleans inaugurated last month

What is probably the first privately-owned barge express service on the Mississippi and Ohio rivers began operations on October 3 when a tow of the Mississippi Valley Barge Line Company left Cincinnati, Ohio, for New Orleans, La. The first tow, consisting of twelve 300-ton barges and the tow boat Ohio, carried general merchandise and high-class freight in carload and less than carload lots on a contemplated schedule of six days for the downstream trip and from 12 to 14 days for the upstream haul. The company will provide express service only, although slower freight movements probably will be inaugurated within a year.

Tows will leave Cincinnati and New Orleans each week. Of the six tow boats included in the company's initial fleet, four large ones will be used on the main line between Cincinnati and New Orleans. The equipment of the company includes six tow boats and 50 barges and a $500,000 river terminal recently completed at Cincinnati. Officers of the new company are as follows: President, L. Wade Childress; vice-president, Carl J. Baer; and secretary and treasurer, Guy A. Thompson. The company maintains headquarters at Cincinnati and New Orleans.

Railways Resume Shop Work

The New York Central has this week reopened its shops at West Albany, N. Y., East Buffalo, N. Y., Collinwood, Ohio, Depew, N. Y., Avis, Pa., and Harmon, N. Y., which had been closed for three weeks. About 5,300 men resume work.

The New York, New Haven & Hartford has this week put to work 1,750 men in its shops at Readville, Mass., and New Haven, Conn., where much work had been temporarily suspended. At Readville the men will work three days a week and at New Haven five days a week.

Divergence in Views on Grain Rates to Maritimes

In three judgments issued last week by the Dominion Railway Board at Ottawa a wide divergence of view was shown on the application of the Harbor Commission of Halifax, N. S., of the Maritime Board of Trade (Nova Scotia and New Brunswick) and of the Canadian National Millers' Association of Montreal regarding grain and flour rail rates for export at Halifax and St. John and the applications were refused. The Chief Commissioner, Hon. H. A. McKeown, and Commissioner T. C. Norris favored the granting of the application, Deputy Chief Commissioner Thomas Vien and Commissioner J. A. Stoneman flatly opposed the granting of the application, and Assistant Chief Commissioner S. J. McLean and Commissioner Calvin Law-

rence favored certain modifications in the application. With the publication of the judgments Premier Gordon Harrington of Nova Scotia announced that the Attorney General of that province, on behalf of Halifax harbor and commercial interests, would appeal.

The application of the Halifax Harbor Commission was for an order directing that the present rate from Fort William, Port Arthur, and Armstrong to Halifax of 21.30 cents per bushel on wheat and 20.40 cents per bushel on other grain be disallowed, and that there be substituted therefore a tariff showing a rate of 11.6 cents per bushel on all grain; and that the present differential of .6 cents from Montreal and Quebec on grain and flour to Halifax be continued. The application of the Transportation Commission of the Maritime Board of Trade was for an Order directing the Canadian National to publish an all-rail rate on grain, in carloads, from Armstrong, Ont., via the National Transcontinental Railway, to Saint John, N. B., West Saint John, N. B., and Halifax, N. S., of 19.34 cents per 100 pounds, for export. The application of the Canadian National Millers' Association, Montreal, was that, in the event of the last mentioned application being granted, the order be extended to include the same rate on grain products for export.

Two Cents a Mile in Texas

The Texas & Pacific on October 29 was granted permission by the Railroad Commission of Texas to reduce its passenger fares from 3.6 cents to 2 cents a mile on its division between Ft. Worth and Big Spring, 267 miles, to meet motor-bus competition.

New Los Angeles-Mexico City Service

The Southern Pacific, effective November 2, will establish tri-weekly through sleeping car service from Los Angeles, Cal., to Mexico City, by way of El Paso, Tex., in addition to its present tri-weekly service by way of Nogales.

Safety Section Regional Meeting

A regional meeting of the Safety Section of the American Railway Association will be held in Chicago on December 8. Frank E. Strouse, special representative of the general manager of the Pennsylvania, will act as chairman of the meeting.

Wage Statistics for August

Class I railways reported to the Interstate Commerce Commission a total of 1,514,367 employees as of the middle of August, a decrease of 245,186 or 13.93 per cent as compared with the total for the corresponding month last year. The total compensation was $215,756,280, a decrease of $44,229,054, or 17.01 per cent, as compared with the corresponding month of last year.

The summary issued by the commission's Bureau of Statistics shows a reduction of 474 in the number of executives, officials and staff assistants, 22,722 in the class of professional, clerical and general employees, 103,225 in the class of maintenance of way and structures employees, 60,679 in the maintenance of equipment and stores group, and 58,086 in the transportation groups.

Northern Pacific Quickens North Coast Limited

The Northern Pacific, following the announcement of the Great Northern and the Chicago, Milwaukee, St. Paul & Pacific that the schedules of the Empire Builder and Olympian would be cut to 58 hr. eastbound and 59¾ hr. westbound on November 9, has decided to operate the North Coast Limited on a schedule of 58½ hr. eastbound and 60¼ hr. westbound after November 16. The train will leave Chicago at 10:30 p.m. as at present, and St. Paul at 8:30 a.m. as at present, but will arrive in Spokane at 9:40 p.m. instead of 9:55 p.m. and Seattle at 8:45 a.m. instead of 9:15 a.m. Returning it will leave Seattle at 8:30 p.m. instead of 6:15 p.m. and Spokane at 7:40 a.m. instead of 7:00 a.m., and will arrive in St. Paul at 11 p.m. instead of 10:45 p.m., and Chicago at 9 a.m. instead of 9:15 a.m.

Ask Reconsideration of Western Class Rate Case

The manufacturers of iron and steel in western trunk line territory have petitioned the Interstate Commerce Commission for a rehearing and reconsideration of the case in which the commission prescribed a revision of western trunk line class rates.

Increase in Commutation Rates Suspended

The Interstate Commerce Commission on October 29, suspended until June 1, 1931, the Delaware, Lackawanna & Western's proposed increase in commutation passenger fares between points in New Jersey and New York City.

Empire State Express Begins Fortieth Year

The Empire State Express, operated by the New York Central between New York and Buffalo began its fortieth year of service on October 27. The announcement in connection with this anniversary stated that during the 39 years of service this train has traveled 10,748,482 miles.

Interurban Lines Suspend Operations

An electric interurban company in Indiana, the Terre Haute, Indianapolis & Eastern, has abandoned operation of 168 miles of lines radiating from Indianapolis. This action was taken on October 31 under authority from the Indiana Public Service Commission. The receiver stated in the petition for abandonment that the 90 trains on the lines had been operated at a loss.

California Grape Shipments

Grape shipments from California for the period of August 30 to October 29 totaled 58,162 carloads, as compared with 51,261 carloads during the same period of 1929, and 66,795 carloads for the same period of 1925, which year witnessed the largest grape movement in the history of the industry. Shipments this year will continue for another month, at which time the estimated total will be about 63,000 carloads, as compared with 74,994 carloads in 1925.

Monon Club-Lounge Cars—A Correction

An article appeared in the October 18, 1930, issue of *Railway Age*, describing two club-lounge cars for the Chicago, Indianapolis & Louisville. The third paragraph of this article stated that: "The furnishings include settees and chairs, arranged on each side of the car, upholstered in various patterns and colors of chaise mohair plush material." Attention has been called to a typographical error in this statement. The particular brand of mohair referred to was "Chase."

Florida Citrus Fruit Quarantine Regulations Amended

The Department of Agriculture's quarantine regulations, forbidding the transportation of fruit from the regulated area of Florida by trucks, have been amended, so that movement of citrus and other fruit by truck, which has been completely shut off since the fruit fly was discovered in Florida in the Spring of 1929, may now be resumed. Fruits can be taken only from certified packing houses and must be packed and recorded according to the governmental regulations. Each box must bear a serially numbered tag, with an accompanying permit.

B. & O. Executive Accepts Diplomatic Post

C. W. Galloway, vice-president in charge of operation and maintenance of the Baltimore & Ohio, has been appointed by the Austrian Government as consul for Austria in the States of Maryland and Delaware, with headquarters at Baltimore, Md. The appointment becomes effective November 1.

As consul, Mr. Galloway's offices will be located as at present, 502 Baltimore & Ohio building, Baltimore; he will set aside the hour from 11 to 12 in the mornings of week-days, except holidays, for the conduct of consulate affairs.

Reduced Drought Rates Applied to 46,375 Cars

Up to noon of November 5 permits had been issued for the movement of 46,375 cars of feed or livestock under the emergency reduced freight rates made

effective by the railroads in August upon shipments into and out of districts certified by the Department of Agriculture as affected by drought conditions, according to reports compiled by the Car Service Division of the American Railway Association. The permits were issued for shipments to 21 states. Virginia leads the list of states with a total of 10,240 cars, while Ohio was second, with 5,819 cars, Kentucky third, with 5,698 cars, West Virginia fourth, with 4,650 cars and Tennessee fifth, with 3,336 cars.

Rehearing of Crane-Crescent Protest

A rehearing of the petition of the Oregon-Washington Railroad & Navigation Company to enjoin the Interstate Commerce Commission from enforcing its order directing that railroad to build a line between Crane, Oregon, and Crescent, 185 miles, will be held at Portland, on December 9 before a three judge federal court. Frank H. Rudkin, judge of the United States Circuit Court of Appeals at Seattle, Wash., will sit with Robert S. Bean and John H. McNary, federal district judges, who presided at the original hearing on September 29 and 30. The rehearsing was made necessary by the death of Circuit Judge Frank S. Dietrich on October 2.

P. R. R. Prizes for New Ideas

The Pennsylvania announces its sixth semi-annual presentation of prizes to employees for new ideas concerning improvements in operation and service, presented under the regulations of the Bureau of New Ideas. The first prize, $100, went to a machinist, the second, $50, to a clerk and the third, $25, to a crossing watchman. These special prizes are in addition to money awards given to individual employees for suggestions adopted. In the three years since the establishment of this bureau, more than 6700 suggestions have been sent in. In 1928, the number adopted was 10 per cent of the whole; the next year 19 per cent were adopted and this year thus far 32 per cent of the suggestions have been adopted.

Pennsylvania Stockholders Reach Highest Figure in October

A total of 212,311 stockholders were registered on the books of the Pennsylvania on October 1, an increase of 4,157 over the previous month and an advance of 27,314 over October of last year. Women stockholders totaled 100,347, an increase of 328 over the previous month and 19,309 over October, 1929.

While portions of this advance in the number of Pennsylvania shareholders may be directly traced to the allotments of new stock to stockholders and employees in the last two years, there has been also a marked tendency toward a wider distribution of the stock among permanent investors generally. In line with this tendency the average holding of all stockholders is steadily declining, having reached a new low figure of 61.13 shares this month.

Especially noteworthy has been the increase in the number of Pennsylvania shareholders in the New England states. Almost 30,000 Pennsylvania stockholders now live in the states of Maine, New Hampshire, Vermont, Massachusetts, Connecticut and Rhode Island, or approximately 8,000 more than were registered in this territory in October of last year. In short, New Englanders and their investment institutions now own Pennsylvania Railroad shares of a market value of more than $100,000,000. New York and New Jersey also reveal considerable increases although Pennsylvania is still holding its own with almost 39 per cent of the total holders residing within its borders.

Large increases also have been recorded in the central states of Ohio, Indiana, Illinois, Michigan and Wisconsin, where 8,700 more stockholders are now registered than at this time last year. Even the island possessions of the United States, scattered throughout the globe, show an increase in the number of Pennsylvania stockholders registered within their borders, advancing from 101 last year to 195 this year, an increase of almost 100 per cent.

His Protest

Samuel Hill, the road-builder, is incensed. Over the Pacific highway, or it may have been the Columbia River highway, for both were children of his dreams there proceeded, as he drove at night, great vans. These vans he compared with freight trains on the highways. The vehicles had formidable height and breadth. Attached to the motorized unit would customarily be a trailer. The trailer was quite as often as capacious as the truck. Met at a curve, or even at a shadowy portion of the straightaway, the freight vans seemed to take all the right of way and thus create a serious hazard.

Mr. Hill had not in the pioneer days of road-building thought of the highways as thoroughfares of motor freight trains. He had thought of them as releases from farms made winter prisons by mud roads. He had thought of them as avenues to scenic beauty that would otherwise not be accessible. He had thought of them as social agencies in the quickening of life and its inter-change.

Mr. Hill thinks, therefore, that the time has come for a crusade. He would like to have the motor freight trains banned. He would like to have the highways reserved for the original uses intended, to benefit farm and town. He would have the freight transferred to the frequently paralleling rails, particularly when these are not used to capacity.

There is, of course, a likelihood that the truck train folks will reply that the highways were built for the use of the public and not for certain classes. They may point out that they furnish a competition that includes rates distinctly to the advantage of the shipper. They may claim the additional advantage of convenience, since they pick the freight up and deliver it directly from door to door and from business to business. They may deny that the big vehicles represent more than 90 per cent of the wear on the highways but do not pay nine-tenths of highway construction and maintenance.

Nevertheless, truck people and the train people and the plain masses of motorists will be interested to know that Samuel Hill, the road-builder, is on the warpath. Armed with a cause, he is hard to stop.—From the Oregon Journal.

The New York Juice Grape Market

The Pennsylvania reports that thus far the present season (beginning September 1) 7000 carloads of grapes from California have been delivered by its trains at the Manhattan Produce Terminal, near Jersey City; 500 more than came in during this period last year. It is expected that by the end of the season this number will have been increased to 11,000 cars. On one day in October, 382 cars were received and sold at the terminal within 24 hours. At the height of the season 1000 buyers travel from New York to the Produce Terminal in a special train each morning and carloads of grapes are auctioned off at the rate of two a minute. The Pennsylvania brings these grapes from Chicago and St. Louis in 100-car trains, which take about three days for the journey. Stops for icing are made at Canton or Columbus, Ohio, and at Huntingdon, Pa.

Temiskaming Line Earnings Satisfactory

George V. Lee, chairman of the Temiskaming & Northern Ontario Railway Commission last week announced that a check for $850,000 has been forwarded to Hon. G. Howard Ferguson, premier of Ontario, to represent a conservative estimate of the railway's net earnings during the past twelve months. Since the books do not close until early in December, it is possible to arrive at only an estimate of the net earnings. Mr. Lee stated that indications point to the gross earnings being equal to those of last year and that the net income will show very little decline compared with 1929. Taking existing conditions into consideration, Mr. Lee said that 1930 may be regarded as a most successful year for the railway, which is owned by the Province of Ontario.

Commenting on the year's business and the outlook for the next twelve-month period, Mr. Lee remarked: "We believe that 1931 will be an excellent year. We

(*Continued on page 1008*)

Revenues and Expenses of Railways

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1930

Name of road		Av. mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1929.
Akron, Canton & Youngstown	Sept.	171	$207,411	$110	$217,660	32,842	20,539	12,257	57,693	14,533	137,864	63.3	$79,796	$80,700	$59,784	$87,199
	9 mos.	171	2,100,999	1,021	2,182,605	347,470	205,290	127,913	602,322	157,328	1,429,840	65.5	752,765	637,361	429,927	899,737
Atchison, Topeka & Santa Fe	Sept.	9,629	12,859,584	2,184,416	16,395,942	1,755,343	2,867,704	372,695	4,287,209	438,550	9,694,557	59.1	6,701,385	4,991,052	4,989,582	5,100,668
	9 mos.	9,630	103,946,109	22,776,446	139,394,353	22,364,661	28,505,834	3,737,194	42,033,025	4,032,571	100,415,867	72.0	38,978,486	26,849,606	26,415,779	42,704,472
Gulf, Colorado & Santa Fe	Sept.	1,976	2,056,991	124,470	2,322,160	225,981	324,460	56,263	645,436	75,931	1,324,073	57.0	998,087	902,924	792,371	506,370
	9 mos.	1,952	16,939,071	1,263,496	19,315,022	3,649,541	4,021,016	514,268	5,977,604	680,156	14,730,459	76.3	4,584,563	3,717,975	2,466,298	3,115,391
Panhandle & Santa Fe	Sept.	1,634	1,136,661	86,792	1,298,586	158,325	238,602	18,708	354,054	37,655	794,031	61.1	504,555	487,100	388,003	363,733
	9 mos.	1,590	10,448,223	750,837	11,916,887	2,751,850	2,430,143	178,885	3,362,164	355,167	8,983,227	75.4	2,933,660	2,567,354	1,496,171	3,142,329
Atlanta & West Point	Sept.	93	127,399	32,478	186,934	35,138	33,805	12,463	77,245	12,072	174,874	93.5	12,060	3,048	—5,993	30,234
	9 mos.	93	1,204,489	357,152	1,801,822	239,596	330,586	108,710	722,172	109,732	1,552,885	86.2	248,937	134,043	29,111	131,695
Western of Alabama	Sept.	133	148,742	35,199	205,945	24,295	40,525	12,548	74,506	11,472	165,649	80.4	40,296	30,143	43,428	52,449
	9 mos.	133	1,358,363	380,584	1,932,159	253,802	398,181	111,456	686,574	115,756	1,599,754	82.8	332,405	206,681	244,379	273,259
Atlanta, Birmingham & Coast	Sept.	639	289,977	15,293	341,820	75,349	66,494	28,239	132,384	19,763	334,286	97.8	7,534	—7,565	—22,654	8,670
	9 mos.	639	2,645,668	158,513	3,143,642	739,532	687,428	257,063	1,331,405	180,509	3,294,340	104.8	—150,698	—286,534	—448,579	—121,523
Atlantic Coast Line	Sept.	5,159	3,383,354	486,212	4,251,327	817,650	1,026,913	154,599	1,645,638	167,429	3,835,212	90.2	416,115	15,307	170,855	434,291
	9 mos.	5,155	34,585,348	8,821,650	47,941,647	7,466,322	9,394,179	1,527,519	17,113,770	1,582,576	37,605,262	78.4	10,336,385	6,093,479	5,714,395	11,086,675
Charleston & Western Carolina	Sept.	342	208,928	7,250	224,286	41,086	42,417	7,220	85,010	7,969	183,689	81.9	40,597	23,069	25,098	43,302
	9 mos.	342	1,983,253	71,225	2,130,917	471,962	339,110	66,542	798,219	66,072	1,741,914	81.7	389,003	218,265	193,528	362,991
Baltimore & Ohio	Sept.	5,658	14,873,609	1,503,296	17,697,181	1,750,890	3,160,738	538,035	5,849,892	651,559	12,115,708	68.5	5,581,473	4,785,730	4,475,672	5,272,802
	9 mos.	5,658	134,577,062	14,392,881	159,857,720	18,185,553	32,931,752	4,806,260	55,493,485	6,163,549	119,179,689	74.6	40,678,031	32,511,003	30,320,832	38,258,473
Baltimore & Ohio Chicago Term.	Sept.	85	.....	.....	336,985	60,613	31,580	2,233	142,122	17,114	256,659	76.2	80,326	29,640	135,727	136,522
	9 mos.	85	.....	.....	2,936,179	448,663	360,318	21,918	1,483,008	170,312	2,534,189	86.3	401,990	—90,313	903,609	1,085,516
Staten Island Rapid Transit	Sept.	23	68,260	126,800	206,908	20,280	13,130	2,383	97,145	15,581	148,525	71.8	58,383	41,383	26,127	66,529
	9 mos.	23	600,508	1,193,368	1,886,202	162,021	145,638	19,816	911,153	154,165	1,392,793	73.8	493,409	337,392	251,624	288,108
Banger & Aroostook	Sept.	619	559,671	32,047	622,058	113,007	101,062	4,751	146,953	24,749	393,413	63.2	228,645	172,104	181,347	247,376
	9 mos.	619	5,586,177	446,607	6,308,685	1,089,069	1,076,756	50,762	1,506,235	238,785	3,986,635	63.2	2,322,050	1,795,484	1,796,366	1,616,876
Belt Ry. Co. of Chicago	Sept.	57	.....	.....	575,522	36,147	52,992	3,966	276,529	12,242	381,876	66.4	193,646	138,404	148,804	141,057
	9 mos.	57	.....	.....	5,233,202	482,629	543,903	37,375	2,493,465	108,879	3,666,251	70.1	1,566,951	1,081,947	1,370,298	1,355,491
Bessemer & Lake Erie	Sept.	227	1,612,318	6,403	1,634,958	79,535	330,574	14,326	314,943	37,335	779,938	47.7	855,020	780,717	773,302	981,172
	9 mos.	227	11,692,727	45,985	11,894,663	1,056,780	2,980,175	138,652	2,586,241	326,898	7,113,912	59.8	4,780,751	4,070,686	4,037,007	5,998,600
Bingham & Garfield	Sept.	33	29,261	.....	30,157	9,030	5,753	1,371	7,677	5,428	29,358	97.4	799	—6,127	10,061	14,912
	9 mos.	33	273,674	88	281,700	58,515	61,619	14,040	74,579	43,611	253,350	89.9	28,350	—22,516	124,300	192,554
Boston & Maine	Sept.	2,090	3,658,025	1,324,658	5,831,542	973,560	822,771	90,828	2,010,380	215,094	4,141,413	71.0	1,690,129	1,358,774	1,120,489	1,210,725
	9 mos.	2,090	34,276,634	11,064,674	52,574,487	9,110,627	7,920,069	824,488	18,952,492	1,971,359	39,004,610	74.2	13,569,877	10,969,178	9,048,789	10,108,335
Brooklyn Eastern Dist. Term.	Sept.	11	118,012	.....	119,419	14,241	12,315	98	36,727	5,628	69,009	57.8	50,410	43,638	43,638	33,970
	9 mos.	11	983,513	.....	1,001,753	86,945	131,697	4,085	326,721	50,725	600,173	59.9	401,580	340,082	340,082	354,000
Buffalo & Susquehanna	Sept.	253	144,479	514	60,116	19,999	39,181	2,174	44,473	8,021	113,848	71.1	46,268	44,193	53,220	20,129
	9 mos.	253	1,246,099	6,249	1,363,101	258,262	389,815	18,352	398,803	74,803	1,140,035	83.6	223,066	216,251	321,489	237,509
Buffalo, Rochester & Pittsburgh	Sept.	601	1,207,312	46,710	1,303,190	180,669	314,169	34,780	484,221	41,068	1,053,764	80.9	249,426	219,424	227,094	266,364
	9 mos.	601	10,728,384	509,672	11,646,685	1,510,358	3,111,974	333,676	4,503,383	398,992	9,873,626	84.8	1,773,059	1,452,260	1,574,407	2,242,934
Burlington-Rock Island	Sept.	367	169,954	4,182	181,636	48,175	31,008	6,725	76,013	12,533	166,880	91.9	14,756	6,938	—20,053	17,613
	9 mos.	367	1,422,031	42,386	1,534,696	994,340	274,692	59,376	665,736	115,914	1,998,234	130.2	—463,538	—535,281	—787,913	—91,325
Canadian Pac. Lines in Maine	Sept.	233	76,952	25,129	116,749	42,967	41,192	8,496	76,135	3,815	172,545	147.7	—55,796	—70,296	—81,811	—95,193
	9 mos.	233	1,479,602	278,226	1,889,870	456,604	451,984	69,956	832,095	39,080	1,849,719	97.8	40,151	—90,349	—261,135	—205,746
Canadian Pac. Lines in Vermont	Sept.	85	90,901	29,898	156,847	11,704	27,303	2,219	78,618	2,474	122,318	77.8	34,529	30,509	—146	—16,903
	9 mos.	85	909,885	296,987	1,423,859	221,218	293,952	18,391	792,445	23,393	1,349,312	94.7	74,547	38,367	—237,962	—228,342
Central of Georgia	Sept.	1,944	1,438,574	178,866	1,758,897	124,693	241,109	72,142	659,919	78,326	1,181,759	67.2	577,138	457,569	459,563	426,379
	9 mos.	1,944	12,509,800	2,210,466	16,331,979	1,823,217	2,843,587	617,089	6,528,096	743,762	12,658,090	77.5	3,673,889	2,606,451	2,664,110	3,296,335
Central New Jersey	Sept.	692	3,250,967	765,482	4,296,909	408,030	820,533	54,953	1,576,392	123,192	3,007,862	70.0	1,289,047	822,637	724,874	881,035
	9 mos.	692	30,437,819	6,638,591	39,536,914	3,874,436	8,316,579	555,306	15,161,037	1,172,170	29,315,584	74.1	10,221,330	6,546,803	5,461,323	6,632,919
Central Vermont	Sept.	462	468,801	96,274	622,019	92,987	84,084	19,366	253,643	22,415	473,503	76.1	148,507	132,348	146,893	166,390
	9 mos.	466	4,460,705	802,178	5,834,803	1,065,573	930,619	166,759	2,446,776	226,368	4,853,463	83.2	981,340	836,974	991,850	1,452,866
Chesapeake & Ohio	Sept.	3,115	11,186,677	451,222	12,138,012	1,501,434	2,076,397	196,642	2,900,930	326,583	7,023,977	57.9	5,114,035	4,186,723	4,272,590	4,568,153
	9 mos.	3,091	94,665,052	4,361,811	103,539,031	14,342,923	20,975,139	1,521,470	26,251,056	3,175,392	66,469,710	64.2	37,069,321	29,535,726	30,006,734	32,408,464
Chicago & Alton	Sept.	1,028	1,456,847	325,984	1,974,008	398,559	382,496	82,817	766,028	59,958	1,694,456	85.8	279,552	165,902	—1,212	250,407
	9 mos.	1,028	13,403,861	3,384,984	18,696,147	2,707,484	4,256,428	698,984	7,142,074	594,968	15,543,407	83.1	3,152,740	2,128,651	431,458	2,710,610
Chicago & Eastern Illinois	Sept.	946	1,263,570	260,171	1,673,804	138,698	371,885	78,852	660,224	70,049	1,331,247	79.5	342,557	187,289	21,203	300,135
	9 mos.	946	11,867,790	2,076,984	15,290,640	1,874,296	3,475,563	731,441	6,361,328	638,709	13,172,774	86.1	2,117,866	903,285	—551,375	1,838,941

Revenues and Expenses of Railways

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1930—CONTINUED

Name of road		Av. mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1929.
Chicago & Illinois Midland	Sept.	131	$248,900	$3,074	$264,638	33,007	46,255	21,310	71,002	21,653	193,155	73.0	$71,483	$63,148	$55,571	$62,986
	9 mos.	131	2,126,666	42,397	2,259,842	256,736	464,479	194,464	648,505	222,981	1,784,740	79.0	475,102	399,836	355,911	363,306
Chicago & North Western	Sept.	8,458	9,418,814	1,604,153	12,322,021	1,641,083	1,888,392	200,268	4,072,715	380,424	8,213,832	66.7	4,108,189	3,372,389	3,024,110	3,252,596
	9 mos.	8,458	74,263,434	15,346,752	100,749,359	14,656,755	19,932,065	2,030,600	38,059,579	3,471,769	78,453,960	77.9	22,295,399	15,432,127	13,327,777	21,777,630
Chicago, Burlington & Quincy	Sept.	9,324	10,336,862	1,299,776	12,847,311	1,102,354	2,024,019	253,699	3,804,983	368,805	8,653,706	67.4	4,193,605	3,201,228	2,883,798	3,577,132
	9 mos.	9,335	83,404,826	12,151,410	106,926,605	16,155,279	16,154,739	2,737,900	35,342,892	3,345,395	74,685,969	69.8	32,240,636	23,631,687	21,356,101	26,479,460
Chicago Great Western	Sept.	1,495	1,836,440	152,411	2,152,404	355,006	174,886	80,405	710,824	51,590	1,379,578	64.1	772,826	670,217	453,943	392,060
	9 mos.	1,495	14,247,523	1,566,072	17,137,161	2,539,574	2,258,477	761,088	6,683,357	486,479	12,755,328	74.4	4,381,833	3,590,420	1,977,612	1,881,778
Chicago, Indianapolis & Louisville	Sept.	645	1,018,634	118,974	1,258,138	148,628	244,397	37,385	436,829	32,163	905,499	72.0	352,639	279,482	149,367	269,586
	9 mos.	647	9,103,229	1,170,954	11,383,755	1,312,465	2,354,702	348,148	4,187,384	322,060	8,614,237	75.7	2,769,518	2,053,152	947,045	1,982,670
Chic., Mil., St. Paul & Pacific	Sept.	11,335	11,325,291	1,030,298	13,579,564	2,220,380	2,274,429	296,731	4,316,508	339,359	9,473,775	69.8	4,105,789	3,302,034	2,852,851	3,111,434
	9 mos.	11,308	88,474,451	9,965,095	109,265,241	17,864,603	21,478,775	2,967,323	40,423,918	3,365,130	86,372,977	79.0	22,892,237	15,608,113	12,175,298	19,569,007
Chicago River & Indiana	Sept.	20	.....	.....	520,769	53,000	40,000	1,660	170,520	17,941	283,121	54.4	237,648	222,808	289.845	339,952
	9 mos.	20	.....	.....	4,667,249	437,000	408,600	13,256	1,643,575	164,741	2,667,172	57.1	2,000,077	1,725,005	2,352,761	2,718,360
Chicago, Rock Island & Pacific	Sept.	7,592	7,991,369	1,155,322	10,004,014	1,104,995	1,581,178	252,178	3,395,058	333,411	6,723,041	67.2	3,280,973	2,606,660	2,202,507	2,432,256
	9 mos.	7,592	70,161,228	11,433,091	90,050,640	11,671,730	15,981,174	2,256,785	33,161,648	3,095,967	66,892,285	74.3	23,158,355	17,894,434	13,887,327	15,871,339
Chicago, Rock Island & Gulf	Sept.	625	375,115	45,863	461,805	76,955	44,610	19,331	170,726	22,025	337,818	73.2	123,987	97,644	70,349	225,947
	9 mos.	579	4,238,835	512,085	5,149,111	720,547	475,064	191,621	1,760,291	193,242	3,351,087	65.1	1,798,024	1,586,888	1,229,272	2,009,974
Chic., St. Paul, Minn. & Omaha	Sept.	1,736	1,796,076	278,284	2,252,808	358,083	350,373	39,573	830,900	85,896	1,674,458	74.3	578,350	464,740	358,141	546,257
	9 mos.	1,742	14,864,733	2,573,426	18,958,795	2,798,274	3,564,281	370,734	7,808,175	770,127	15,397,323	81.2	3,561,472	2,581,323	1,863,620	2,608,135
Clinchfield Railroad	Sept.	309	463,546	7,354	481,048	50,278	119,525	20,073	105,615	16,830	312,150	64.9	168,898	103,898	158,081	288,212
	9 mos.	309	4,383,344	86,754	4,560,402	532,267	1,144,059	191,229	997,157	160,897	3,024,634	66.3	1,535,768	910,599	1,425,079	1,968,550
Colorado & Southern	Sept.	1,038	727,372	90,154	892,946	132,141	167,685	14,640	289,501	40,415	648,349	72.6	244,597	174,360	147,234	189,603
	9 mos.	1,038	6,158,044	661,830	7,509,317	1,174,477	1,493,632	146,079	2,719,120	379,641	5,942,285	79.1	1,567,032	936,297	732,013	753,772
Ft. Worth & Denver City	Sept.	696	549,325	104,225	719,413	92,948	102,665	20,871	233,174	38,781	493,743	68.6	225,670	181,421	159,415	226,361
	9 mos.	696	5,718,005	1,006,341	7,272,199	1,011,425	1,274,146	193,313	2,296,299	351,875	5,142,878	70.7	2,129,321	1,713,927	1,576,966	2,439,545
Wichita Valley	Sept.	270	63,659	2,187	71,083	19,740	4,239	30	28,895	2,431	55,324	77.8	15,759	8,573	—7,363	29,587
	9 mos.	271	549,305	24,863	616,494	223,012	49,424	356	260,770	15,626	545,489	88.5	71,005	7,099	—159,161	160,329
Columbia & Greenville	Sept.	167	107,550	10,632	125,698	40,869	18,825	4,487	45,388	11,622	120,514	95.9	5,184	2,159	130	43,310
	9 mos.	167	1,013,760	116,331	1,200,285	308,120	178,615	38,247	430,881	105,988	1,058,319	88.2	141,966	106,463	85,527	111,724
Conemaugh & Black Lick	Sept.	20	59,888	.....	98,883	14,038	15,067	532	53,939	3,385	86,961	87.9	11,922	10,922	11,595	43,764
	9 mos.	20	642,093	.....	1,152,863	114,957	187,555	7,553	653,009	33,007	996,081	86.4	156,782	147,782	171,978	311,196
Delaware & Hudson	Sept.	881	2,939,594	291,249	3,440,753	458,692	720,184	56,488	1,078,828	137,937	2,462,734	71.6	978,019	855,019	904,654	929,030
	9 mos.	881	24,362,273	2,223,812	28,496,810	4,072,894	6,693,756	527,167	10,142,199	1,428,751	22,931,870	80.5	5,564,940	4,456,723	4,499,516	5,663,991
Delaware, Lackawanna & Western	Sept.	998	4,038,552	889,812	5,649,599	575,730	1,063,701	131,272	2,254,585	171,440	4,237,725	75.0	1,411,874	901,675	951,509	1,854,803
	9 mos.	998	37,997,657	7,811,683	52,395,741	5,260,142	9,704,480	1,311,422	21,498,757	1,585,436	39,741,161	75.8	12,654,580	8,131,476	8,247,777	12,522,330
Denver & Rio Grande Western	Sept.	2,524	2,421,023	258,800	2,880,671	374,020	414,449	66,526	837,257	88,268	1,800,794	62.5	1,079,877	899,784	870,334	1,152,037
	9 mos.	2,557	17,706,111	2,133,888	21,489,418	2,971,318	4,230,054	539,156	6,622,829	816,535	15,384,279	71.6	6,105,139	4,531,716	4,691,611	6,040,270
Denver & Salt Lake	Sept.	232	294,032	9,514	330,132	57,071	44,138	1,916	46,154	11,495	160,774	48.7	169,358	152,358	158,200	233,131
	9 mos.	232	1,907,522	120,816	2,194,994	541,200	513,584	20,762	373,985	137,228	1,572,108	71.6	622,886	481,784	552,023	1,003,721
Detroit & Mackinac	Sept.	242	79,214	6,457	97,151	35,795	11,973	2,109	34,158	2,943	80,698	83.1	16,453	7,869	6,616	34,606
	9 mos.	252	689,542	70,118	840,017	248,495	156,109	19,392	318,479	58,505	762,510	90.8	77,507	11,548	9,013	246,828
Detroit & Toledo Shore Line	Sept.	50	236,546	.....	242,865	41,892	25,870	6,650	68,348	8,532	150,547	62.0	92,318	77,648	17,141	37,112
	9 mos.	50	2,821,968	.....	2,864,379	349,863	288,483	68,397	739,278	103,781	1,548,632	54.1	1,315,747	1,102,435	539,702	685,458
Detroit Terminal	Sept.	19	.....	.....	94,691	16,606	9,833	.....	54,138	3,545	84,122	88.8	10,569	—2,963	—2,896	36,798
	9 mos.	19	.....	.....	1,104,793	163,782	108,777	83	562,707	40,426	875,775	79.3	229,018	91,389	99,286	572,435
Detroit, Toledo & Ironton	Sept.	496	639,614	1,506	656,882	88,591	123,746	12,928	212,029	30,092	467,070	71.1	189,812	170,072	156,303	316,711
	9 mos.	501	8,297,301	15,382	8,470,274	1,123,342	1,015,894	120,759	2,238,283	309,366	4,799,238	56.7	3,671,036	3,162,238	2,864,913	4,135,358
Duluth, Missabe & Northern	Sept.	568	2,474,764	6,006	2,812,753	258,762	288,378	4,270	464,052	40,006	1,055,464	37.5	1,757,289	1,525,263	1,520,665	2,312,283
	9 mos.	567	15,815,851	59,649	17,965,148	2,376,372	2,765,856	37,567	3,380,319	391,440	8,950,991	49.8	9,014,157	7,272,191	7,294,093	11,892,691
Duluth, Winnipeg & Pacific	Sept.	178	111,512	10,968	135,207	31,521	28,730	4,708	57,930	7,176	134,155	99.2	1,052	—6,434	5,319	11,648
	9 mos.	178	1,203,992	100,715	1,390,139	283,723	327,994	45,538	588,594	67,386	1,344,322	96.7	45,817	—25,840	399	226,793
Elgin, Joliet & Eastern	Sept.	452	1,442,764	97	1,609,190	279,921	366,945	15,505	640,760	54,758	1,356,809	84.3	252,381	140,268	11,078	438,457
	9 mos.	452	15,690,761	2,444	17,314,916	2,043,061	2,873,788	143,500	6,545,418	488,068	12,082,655	69.8	5,232,261	4,170,828	2,681,587	4,707,351
Erie Railroad	Sept.	2,046	6,862,423	748,138	8,321,513	1,148,052	1,687,568	163,453	3,019,941	289,376	6,330,288	76.1	1,991,225	1,592,577	1,441,727	1,792,724
	9 mos.	2,046	59,204,747	7,300,113	72,807,045	9,110,029	16,449,064	1,605,521	28,171,556	2,696,450	58,356,323	80.2	14,450,722	10,862,095	10,063,932	14,498,265
Chicago & Erie	Sept.	269	1,017,252	46,226	1,163,826	175,110	126,998	26,837	332,566	42,505	702,516	60.4	461,310	403,157	122,806	176,594
	9 mos.	269	8,968,223	478.269	10,237,910	1,264,867	1,230,870	265,584	3,094,515	391,058	6,236,131	60.9	4,001,779	3,478,232	1,025,362	1,953,793

Revenues and Expenses of Railways

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1930—CONTINUED

Name of road		Av. mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1929.
New Jersey & New York	Sept.	45	$21,448	$90,311	$115,545	$18,877	$19,050	$1,398	$58,275	$3,424	$101,019	87.4	$14,526	$10,192	—$19,248	—$37,105
	9 mos.	45	204,817	831,055	1,077,208	144,498	193,251	14,334	560,325	33,842	946,207	87.8	131,001	89,841	—184,101	—209,072
N. Y., Susquehanna & Western	Sept.	131	313,489	36,652	378,774	53,007	41,155	4,469	150,532	11,334	260,493	68.8	118,281	86,713	62,957	56,286
	9 mos.	131	2,812,496	356,655	3,482,224	443,930	413,261	43,863	1,505,390	106,859	2,513,073	72.2	969,151	684,871	460,060	412,657
Florida East Coast	Sept.	863	374,216	98,548	555,656	144,529	158,576	26,286	204,398	44,467	585,935	105.4	—30,279	—130,342	—169,283	—187,968
	9 mos.	863	5,082,482	3,033,068	9,364,289	1,397,867	1,729,215	270,593	2,794,803	406,677	6,757,988	72.2	2,606,301	1,492,621	895,941	1,877,578
Fort Smith & Western	Sept.	249	107,238	6,034	119,527	23,056	19,760	5,010	36,700	5,944	89,662	75.0	29,865	26,311	17,694	17,092
	9 mos.	249	858,516	60,332	978,484	194,555	195,550	49,933	348,516	58,342	839,140	85.8	139,344	101,449	3,763	33,563
Galveston Wharf	Sept.	13	.....	.....	203,104	38,371	3,667	4,086	33,238	7,332	109,109	53.7	93,995	70,705	70,813	59,311
	9 mos.	13	.....	.....	1,341,400	324,230	51,548	37,233	264,183	59,245	884,105	65.9	457,295	245,995	248,753	454,559
Georgia R. R.	Sept.	328	332,057	37,499	400,749	47,033	71,331	22,523	165,673	23,197	329,693	82.3	71,056	62,360	75,723	81,916
	9 mos.	328	2,886,965	380,423	3,535,699	411,633	690,832	202,085	1,539,224	205,171	3,046,178	86.2	489,521	411,484	533,805	701,364
Georgia & Florida	Sept.	469	159,172	4,642	170,583	35,331	24,570	10,893	52,075	8,419	131,486	77.1	39,097	30,397	24,367	17,459
	9 mos.	494	1,189,306	50,994	1,305,312	292,772	199,359	92,492	469,512	73,390	1,129,483	86.5	175,829	94,402	73,434	136,128
Grand Trunk Western	Sept.	1,019	1,676,855	156,353	1,970,906	346,489	404,285	66,388	855,370	102,289	1,790,169	90.8	180,737	33,747	—215,628	564,607
	9 mos.	1,019	17,801,525	1,526,134	20,758,766	3,116,794	3,961,232	641,170	8,530,727	931,779	17,280,697	83.2	3,478,069	2,155,829	482,424	5,790,773
Atlantic & St. Lawrence	Sept.	166	116,867	16,914	161,239	43,155	51,418	5,537	86,421	10,405	198,502	123.1	—37,263	—49,863	—96,586	—80,560
	9 mos.	166	1,143,341	190,982	1,495,646	312,483	385,424	53,993	799,752	80,702	1,645,080	109.9	—149,434	—275,259	—720,834	—693,697
Great Northern	Sept.	8,366	10,564,965	805,315	12,326,041	818,887	1,449,129	216,158	3,041,966	231,838	5,841,280	47.4	6,484,761	5,615,069	5,375,134	4,888,285
	9 mos.	8,366	62,807,374	7,157,829	77,831,743	11,519,746	14,219,489	2,231,381	25,406,090	2,162,850	56,242,633	72.3	21,589,110	14,850,866	13,913,179	22,562,240
Green Bay & Western	Sept.	234	136,358	2,483	147,789	26,158	19,508	5,680	50,847	2,855	105,019	71.1	42,770	34,770	29,823	38,654
	9 mos.	234	1,250,451	25,641	1,325,123	227,762	198,163	56,097	487,725	26,232	995,662	75.1	329,461	248,386	201,768	239,986
Gulf & Ship Island	Sept.	307	187,084	22,888	232,590	38,804	23,773	4,569	90,847	6,407	166,962	71.8	65,628	31,501	16,309	24,241
	9 mos.	307	1,566,226	262,414	2,067,112	426,918	324,741	42,854	820,798	60,913	1,703,832	82.4	363,280	69,967	—53,723	—24,369
Gulf, Mobile & Northern	Sept.	733	434,036	19,566	473,648	79,194	71,169	26,675	149,940	18,358	344,683	72.77	128,965	99,771	67,338	181,327
	9 mos.	733	4,123,432	199,812	4,519,438	805,205	747,794	270,348	1,483,773	231,015	3,540,746	78.34	978,692	705,364	433,797	1,038,385
Illinois Central	Sept.	5,018	7,992,404	1,178,315	9,912,152	878,479	1,871,756	252,801	3,636,455	344,638	7,056,726	71.2	2,855,426	2,220,526	2,276,809	2,534,760
	9 mos.	5,018	74,812,355	13,099,639	95,889,267	11,147,904	21,762,978	2,395,450	35,847,453	3,260,667	75,153,977	78.4	20,745,290	14,451,473	14,002,387	18,469,360
Yazoo & Mississippi Valley	Sept.	1,705	1,703,520	179,590	2,000,853	216,500	245,529	44,214	676,409	62,502	1,251,501	62.5	749,352	588,821	472,568	672,108
	9 mos.	1,705	14,486,954	2,059,603	17,675,185	2,638,565	3,046,629	405,518	6,922,672	584,739	13,635,574	77.1	4,039,611	2,525,364	1,581,575	1,472,259
Illinois Central System	Sept.	6,724	9,695,924	1,357,905	11,913,005	1,094,979	2,117,285	297,015	4,312,864	407,140	8,308,227	69.7	3,604,778	2,801,347	2,749,377	3,212,525
	9 mos.	6,724	89,349,388	15,175,503	113,630,796	13,786,469	24,831,678	2,800,968	42,804,813	3,846,204	88,837,108	78.2	24,793,688	16,980,281	15,587,406	19,952,846
Illinois Terminal	Sept.	554	527,314	98,608	654,477	89,430	80,174	18,784	196,766	37,610	420,703	64.25	233,774	199,646	160,897	140,347
	9 mos.	554	4,324,594	1,077,880	5,679,166	710,375	740,444	173,700	1,950,591	377,314	3,935,379	69.30	1,743,787	1,474,987	1,093,870	1,246,554
Kansas City Southern	Sept.	784	1,157,647	60,340	1,341,168	179,255	221,232	60,975	400,616	65,509	929,510	69.3	411,658	324,227	228,890	462,644
	9 mos.	784	11,211,622	634,877	13,125,899	1,522,308	2,197,830	571,359	3,898,864	710,387	8,933,017	68.1	4,192,882	3,247,132	2,716,510	3,030,553
Texarkana & Ft. Smith	Sept.	99	197,486	4,453	224,841	23,401	13,611	9,099	52,029	21,017	124,900	55.5	99,941	99,612	59,851	100,193
	9 mos.	99	1,714,861	48,263	1,973,108	245,142	206,156	80,345	504,765	112,643	1,183,578	60.0	789,530	693,964	387,636	766,229
Kansas, Oklahoma & Gulf	Sept.	326	269,134	1,549	276,333	25,408	28,536	15,024	56,816	12,222	137,889	49.9	138,444	114,537	91,612	110,064
	9 mos.	326	2,268,683	17,298	2,331,362	264,160	224,102	141,718	564,941	104,119	1,295,238	55.6	1,036,124	841,790	656,567	959,837
Lake Superior & Ishpeming	Sept.	160	191,554	338	222,766	43,992	28,965	620	46,681	7,910	127,952	57.4	94,814	69,493	64,725	209,780
	9 mos.	160	1,606,154	7,404	1,863,312	329,662	247,771	5,505	408,017	57,995	1,048,486	56.3	814,826	538,805	511,132	1,073,739
Lake Terminal	Sept.	12	.....	.....	98,939	13,927	12,107	.....	46,926	1,961	74,921	75.7	24,018	18,361	12,530	14,626
	9 mos.	12	.....	.....	773,565	128,289	108,837	.....	383,468	21,350	641,944	83.0	131,621	90,573	52,073	164,718
Lehigh & Hudson River	Sept.	96	178,299	1,158	188,914	21,243	30,835	3,302	67,652	10,289	133,321	70.6	55,593	38,547	18,937	53,282
	9 mos.	96	1,590,755	9,567	1,691,941	216,562	208,768	31,180	607,872	90,899	1,215,281	71.8	476,660	341,370	197,417	304,010
Lehigh & New England	Sept.	216	397,771	793	404,157	52,054	83,550	5,902	153,507	36,125	331,001	81.9	73,156	63,582	50,506	178,249
	9 mos.	216	3,661,856	8,025	3,721,655	473,607	758,516	61,371	1,321,550	228,573	2,843,447	76.4	878,208	760,613	701,854	741,266
Lehigh Valley	Sept.	1,361	4,084,963	454,605	4,922,923	589,278	1,089,092	140,727	1,971,590	139,435	3,956,871	80.4	966,052	723,440	603,054	1,619,319
	9 mos.	1,361	37,874,435	4,355,080	45,924,661	4,499,135	10,012,010	1,298,922	19,135,783	1,288,350	36,489,769	79.5	9,434,892	6,801,857	5,886,692	9,701,969
Louisiana & Arkansas	Sept.	608	551,768	16,446	596,499	88,447	73,162	25,054	156,927	26,289	370,402	62.1	226,097	180,926	152,767	184,263
	9 mos.	620	5,017,554	177,491	5,433,399	828,231	853,014	199,227	1,611,080	235,627	3,725,362	68.6	1,708,037	1,294,265	927,358	968,280
Louisiana, Arkansas & Texas	Sept.	202	70,720	1,956	76,226	20,843	18,520	4,600	28,613	4,743	77,319	101.4	—1,093	—5,093	—13,833	10,660
	9 mos.	203	638,379	18,481	684,232	202,036	135,850	30,642	316,658	47,580	731,674	106.9	—47,442	—83,620	—185,605	—151,319
Louisville & Nashville	Sept.	5,252	7,955,163	837,513	9,371,681	1,187,640	2,085,017	232,942	3,132,510	373,921	7,025,145	75.0	2,346,536	1,762,524	1,856,862	2,400,351
	9 mos.	5,248	71,127,074	9,229,671	85,911,086	13,513,789	21,512,875	2,206,760	31,080,246	3,331,548	72,009,631	83.8	13,901,455	9,143,541	9,429,645	14,750,809
Maine Central	Sept.	1,121	1,227,815	245,778	1,637,278	220,816	382,885	16,642	562,521	49,468	1,235,751	75.5	401,527	304,012	285,915	317,774
	9 mos.	1,121	11,099,911	2,178,297	14,600,613	2,237,967	2,779,087	158,269	5,405,431	454,143	11,058,454	75.7	3,542,159	2,668,929	2,282,630	2,573,218

Revenues and Expenses of Railways

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1930—CONTINUED

Name of road		Av. mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1929.
Midland Valley	Sept.	$363	$298,879	$4,789	$311,753	$49,045	$21,610	$5,038	$63.707	$11,484	$150,780	48.4	$160,973	$145,956	$124,637	$130,870
	9 mos.	363	2,179,309	53,838	2,305,099	344,420	268,945	49,906	569,908	114.466	1,342,792	58.3	962,307	829,838	681,630	777,256
Minneapolis & St. Louis	Sept.	1,627	1,150,446	42,612	1,260,255	150,551	186,246	35,906	458.478	43,774	875,957	69.5	384,298	316,908	251,533	233.544
	9 mos.	1,627	8,637,278	454,580	9,662,833	1,310,430	1,889,919	340,316	4,283,945	398,341	8,224,738	85.1	1,438,095	876,584	424,907	1,586,838
Minneapolis, St. Paul & S. S. Marie	Sept.	4,374	3,983,726	306,805	4,607,483	529,624	639,144	74,422	1,298,014	124,395	2,687,757	58.3	1,919,726	1,655,471	1,491,545	1,262,177
	9 mos.	4,395	25,419,768	2,758,341	30,777,240	4,607,399	6,001,827	733,707	11,487,742	1,128.368	24,152,309	78.5	6,624,934	4,516,692	3,189,321	6,478,597
Duluth, South Shore & Atlantic	Sept.	573	219,239	38,214	285,712	57,098	54,482	8,794	118,194	9,950	251,074	87.9	34.668	—716	—2,042	71,898
	9 mos.	573	2,450,061	322,317	3,017,933	572,759	569,767	75,406	1,256,091	95,976	2,591,300	85.9	426,633	121,076	42,020	336,482
Spokane International	Sept.	165	71,933	5,419	83,730	17,978	5.834	3,423	26,733	5,669	60,507	72.3	23,223	18,196	11,938	31,532
	9 mos.	165	607,091	57,799	720,375	156,327	67,645	31,166	250,857	54,354	568,837	79.0	151,538	105,915	56,240	189,224
Mississippi Central	Sept.	150	109,809	4,391	117,837	14,050	14,872	9,933	31,695	7,858	78,408	66.5	39,429	30,584	25,116	54,435
	9 mos.	150	932,994	44,600	1,011,858	142,065	190,124	89,308	293,971	73,892	789,357	78.0	222,501	160,222	149,380	286,457
Missouri & North Arkansas	Sept.	364	137,725	5,344	149,393	41,242	17,424	10,830	54,206	8,192	131,983	88.4	17,410	14,910	564	32,180
	9 mos.	364	1,151,740	55,692	1,274,817	289,205	158,092	88,232	483,036	72,616	1,091,272	85.6	183,545	161,604	40,712	19,161
Missouri-Illinois	Sept.	202	153,315	1,352	157,330	29,985	30,229	3,507	42,231	6,901	112.753	71.7	44,577	35,520	23,806	64,059
	9 mos.	202	1,366,853	14,488	1,409,172	221,267	293,986	31,108	415,885	61,098	1,022,029	72.5	387,143	322,219	237,071	433,424
Missouri-Kansas-Texas Lines	Sept.	3,188	3.207.688	365,616	3,921,430	469,153	556,396	118,716	1,121,141	159,698	2,435,234	62.1	1,486,196	1,397,867	1,155,215	977,224
	9 mos.	3,188	26,974,743	3,812,944	33,703,193	4,494,899	5,684,662	1,111,369	10,694,205	1,510,197	23,586,472	70.0	10.116,721	8,177,233	6,158,538	8,433,156
Missouri Pacific	Sept.	7,450	8,935.361	765,958	10,579,058	1,493,620	1,831,868	281,356	3,551,657	363,140	7,475,122	70.7	3,103,936	2,611,627	2,057,878	2,711,986
	9 mos.	7,451	76,306,753	8,105,369	92,205,418	14,266,894	16,239,984	2,716,656	32,323,690	3,444,579	68,791,786	74.6	23,413,632	19,282,800	15,550,714	18,031,622
Gulf Coast Lines	Sept.	1,026	925,633	91,366	1,089,411	160,172	224,539	40,473	315,342	57,068	795,618	73.03	293,793	243,997	205,208	247,949
	9 mos.	1,026	10,532,111	1,058,184	12,295,473	2,013,996	2,101,856	408,695	3,167,559	559,468	8,207,567	66.75	4,087,906	2,832,508	2,832,508	2,323,899
International-Great Northern	Sept.	1,159	1,224,420	125,596	1,505,356	193,732	207.270	45,377	505,336	71,342	1,044,664	69.40	460,692	416,910	349,686	266,420
	9 mos.	1,159	9,073,628	1,298,072	11,537,610	1,890,518	2,077,493	385,877	4,722,941	642,669	9,793,159	84.88	1,744,451	1,351,334	592,835	1,654,734
San Antonio, Walde & Gulf	Sept.	318	133,355	11,714	152,213	37,381	17,746	5,557	48,927	6,779	115,314	75.8	36,899	32,206	6,204	—23,478
	9 mos.	318	1,186,663	139,964	1,435,167	354,703	168 878	54,165	370,477	68,379	1,009,262	70.3	425,905	383,494	142,070	92,371
Mobile & Ohio	Sept.	1,158	982,316	53,188	1,097,177	186,410	219,508	58,650	418,989	46,852	928,451	84.6	168,726	81,187	14,423	267,636
	9 mos.	1,159	9,682,705	587,013	10,887,104	1,679,611	2,054,723	510,168	4,161,286	449,664	8,832,743	81.1	2,054,361	1,268,436	691,278	1,948,282
Monongahela	Sept.	177	459,801	3,261	466,268	65,000	45,000	1,508	121,811	9,946	242,457	52.0	223.811	206,051	112,106	147,196
	9 mos.	177	4,581,518	49,956	4,668,314	680,000	585,000	11,912	1,225,453	96,099	2,588,600	55.5	2,079,714	1,914,877	1,020,526	1,514,021
Monongahela Connecting	Sept.	6	.....	.....	132,717	15,912	33,700	300	61,902	2,810	114,624	86.4	18,093	10,926	10,867	45.206
	9 mos.	6	.....	.....	1,519,311	177,352	307,902	2,727	671,652	25,154	1,184,787	78.0	334,524	260,213	200,904	431,058
Montour	Sept.	57	223,397	.....	224,036	30,631	45,319	1,499	51,474	7,616	136,148	60.8	87,888	86,111	95,463	94,052
	9 mos.	57	1,893,211	363	1,898,983	246,818	460,471	12,797	471,748	70,787	1,261,822	66.4	637,161	621,184	711,976	706,968
Nashville, Chattanooga & St. Louis	Sept.	1,203	1,284,972	143,648	1,577,082	225,450	333,763	69,180	559.823	75,859	1,271,103	80.6	305,979	236,680	235,607	468,117
	9 mos.	1,203	12,035,933	1,689,259	15,037,494	2,273,065	3,159,642	724,237	5,699,090	707,118	12,617,605	83.9	2,419,889	1,824,864	1,770,498	3,767,327
Nevada Northern	Sejt.	165	48,176	2,528	57,083	11,470	4,065	1,059	14,059	4,574	35,227	61.7	21,856	13,494	15,175	45,059
	9 mos.	165	500,360	26,913	591,719	112,611	49,342	9,326	129,080	41,513	342,315	57.9	249,404	169,803	177,476	496,591
Newburgh & South Shore	Sept.	6	.....	.....	107,562	24,317	34,386	.....	48,382	7,061	114,146	106.1	—6,584	—21,658	—19,105	39,832
	9 mos.	6	.....	.....	1,060,411	115,532	117,072	.....	486,064	55,944	774,612	73.0	285,799	144,916	162,375	331,243
New Orleans Great Northern	Sept.	264	208.077	11,759	226,428	29,551	30,599	17,562	68,212	10,290	156,214	69.0	70,214	55,103	33,450	53,407
	9 mos.	268	1,979,267	125,324	2,173,482	262,405	366,446	115,848	693,044	97,965	1,533,326	70.5	640,156	504,313	239,926	342.850
New Orleans Terminal	Sept.	20	1,637	.....	130,144	13,113	13,334	.....	49,046	1,628	77,121	59.3	53,023	41,765	34,913	—14,102
	9 mos.	20	18,834	.....	1,227,638	157,602	125,344	.....	484,715	15,303	782,964	63.8	444,674	343,356	337,269	395,586
New York Central	Sept.	11,477	26,270,006	9,378,692	40,939,549	5.885,664	8,519,519	839.440	14,048,183	1,359,140	31,261.610	76.4	9,677,939	6,686.293	5,617,804	10,438,800
	9 mos.	11,477	236,073,854	86,525,944	368,433,392	48,995,682	80,142,796	7,299,302	132,599,625	12,565,856	287,357.930	78.0	81,075,462	54,338,796	46,639,745	81,866.510
Indiana Harbor Belt	Sept.	120	.....	.....	884,821	100,000	100,000	4,810	329,406	32,592	578,929	65.4	305,892	261,600	209,182	375.779
	9 mos.	120	.....	.....	8,201,081	789,000	909,539	44,790	3,405,677	279,999	5,561,721	67.8	2,639,360	2,213,598	1,887,157	2,557,978
Pittsburgh & Lake Erie	Sept.	231	2,018,400	131,322	2,223,956	258,100	562,140	33,977	741,025	77,966	1,682,803	75.7	541,153	393,853	656,457	780.766
	9 mos.	231	19,573,358	1,375,132	21,635,780	2,325,430	6,334,721	337.623	7,179,516	713.616	16,984,263	78.5	4,651,517	3,238,691	5,756,928	6,203.729
New York, Chicago & St. Louis	Sept.	1,690	3,598,766	166,388	3,924,542	583.560	690.413	104,287	1,337,492	34,220	2,751,022	70.1	1,173,520	950,427	675.577	1,171,796
	9 mos.	1,690	32,977,438	1,553,254	35,929,068	4,837,945	6,843,247	1,143,941	13,075,705	1,149,011	26,992,750	75.1	8,936,318	7,057,214	4,853,856	8,599,667
N. Y., New Haven & Hartford	Sept.	2,120	5,111,812	3,512,086	9,753,110	1,511,504	1,441,758	83,202	3.078.346	318,522	6,600.726	67.7	3,152,384	2,651.712	2,041,828	3,209,739
	9 mos.	2,129	47,570,598	32,189,809	90,130,959	13,058,431	13,862,567	921,655	28,905,963	2,846,585	61,256,152	68.0	28,874,807	23,349,006	18,127.388	23,423,116
New York Connecting	Sept.	20	161,261	.....	191,493	13,576	10.508	.....	31,474	1,547	57,105	29.8	134,388	98,263	73,493	137.283
	9 mos.	20	1,646,933	.....	1,882,169	183,631	99,294	.....	304,141	15,849	602,915	32.0	1,279,254	955,751	726,597	860,252
New York, Ontario & Western	Sept.	568	691,192	123,673	961,186	113,053	154,385	16,792	363,938	26,596	675.870	70.3	285.316	242,701	188,991	122,910
	9 mos.	568	5,667,735	1,307,568	8,320,948	1,131,639	1,589,483	153,938	3,488,247	279,619	6,677,046	80.2	1,643,902	1,260,703	845,249	900,987

Revenues and Expenses of Railways

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1930—CONTINUED

Name of road		Av. mileage operated during period.	Operating revenues			Operating expenses						Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1929.
			Freight.	Passenger.	Total (inc. misc.)	Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.					
Norfolk & Western	Sept.	2,240	$8,148,004	$316,525	$8,740,277	$1,029,101	$1,576,331	$130,359	$1,983,557	$250,610	$4,977,358	57.0	$3,762,919	$2,962,638	$3,248,174	$4,223,137
	9 mos.	2,240	71,406,976	3,055,076	77,156,102	9,479,659	14,452,515	1,172,244	18,420,943	2,273,289	45,906,048	59.5	31,250,054	23,645,585	25,526,992	31,610,926
Norfolk Southern	Sept.	932	501,991	23,312	555,164	85,266	77,540	29,076	216,045	23,922	431,818	77.8	123,346	70,270	60,714	115,591
	9 mos.	932	4,729,268	218,875	5,225,975	764,918	793,300	264,520	2,077,286	240,593	4,132,316	79.1	1,093,659	623,361	483,462	998,384
Northern Pacific	Sept.	6,785	7,190,990	640,443	8,538,338	672,936	1,581,758	192,257	2,367,092	261,058	5,202,625	60.9	3,335,713	2,669,051	2,988,759	3,518,420
	9 mos.	6,784	48,352,116	6,158,309	60,492,158	8,244,477	13,123,164	2,196,103	21,495,634	2,333,929	48,458,988	80.1	12,033,170	5,989,773	8,893,221	15,065,546
Northwestern Pacific	Sept.	441	376,547	130,285	548,282	118,206	67,705	5,331	228,337	17,226	435,809	79.5	112,473	76,617	61,471	100,287
	9 mos.	452	2,748,236	1,234,928	4,354,154	933,528	718,085	66,477	1,900,846	147,870	3,760,439	86.4	593,715	269,251	196,563	279,612
Oklahoma City-Ada-Atoka	Sept.	129	62,055	2,330	67,752	16,840	7,096	1,101	19,275	3,143	47,455	70.0	20,297	15,909	4,364	7,173
	9 mos	129	603,928	43,421	678,680	220,489	67,385	11,552	225,767	34,025	556,036	81.9	122,644	83,847	—34,164	11,067
Pennsylvania R. R.	Sept.	10,878	33,869,135	9,675,434	48,301,128	5,788,143	8,679,262	810,719	17,040,024	1,657,275	34,541,289	71.2	13,959,839	9,846,095	8,609,897	13,674,471
	9 mos.	10,878	307,782,727	90,155,165	441,913,777	54,403,773	85,660,976	7,823,511	161,532,072	15,250,017	330,185,173	74.7	111,728,604	82,533,049	71,475,386	107,306,293
Long Island	Sept.	404	989,538	2,437,065	3,589,671	348,989	391,953	19,307	1,236,197	62,646	2,059,404	57.4	1,530,267	1,121,855	928,655	994,058
	9 mos.	404	7,684,932	21,171,676	30,365,004	3,626,765	3,908,622	205,478	11,565,153	600,164	19,910,756	65.6	10,454,248	7,898,588	6,459,733	7,330,402
Peoria & Pekin Union	Sept.	19	13,872	537	136,655	17,590	12,177	5,746	54,388	7,427	97,328	71.2	39,327	23,591	73,550	60,808
	9 mos.	19	134,513	8,967	1,242,745	209,894	129,861	47,218	549,448	72,422	1,008,843	81.2	233,902	86,982	302,411	395,585
Pere Marquette	Sept.	2,264	2,863,394	167,359	3,223,997	450,633	616,251	82,612	1,136,459	107,703	2,392,338	74.2	831,659	643,836	556,313	857,029
	9 mos.	2,248	25,682,574	1,773,443	29,212,887	4,198,887	5,961,092	688,921	10,586,746	1,044,772	22,500,652	77.0	6,712,235	5,241,057	3,900,388	8,224,911
Pittsburgh & Shawmut	Sept.	102	80,247	3,212	85,168	10,512	18,631	1,970	24,928	6,045	62,086	72.9	23,082	22,576	23,248	21,153
	9 mos.	102	851,921	34,596	903,358	119,566	203,031	15,456	268,207	58,834	665,094	73.6	238,264	227,919	246,989	270,484
Pittsburgh & West Virginia	Sept.	92	284,337	2,539	313,207	44,656	66,534	18,408	58,477	22,675	219,686	70.1	93,531	59,699	119,526	173,590
	9 mos.	92	2,689,428	26,921	2,962,607	223,112	667,304	176,849	551,162	188,437	1,893,561	63.9	1,070,046	798,355	1,277,191	1,874,583
Pittsburgh, Shawmut & Northern	Sept.	198	129,561	495	133,649	29,787	24,062	1,829	44,933	8,145	108,756	81.4	24,893	22,115	15,207	4,345
	9 mos.	198	1,157,256	8,027	1,198,615	272,337	237,206	15,869	403,760	61,540	990,712	82.6	207,903	182,336	114,903	176,659
Quincy, Omaha & Kansas City	Sept.	249	77,571	4,134	88,226	35,831	8,753	774	26,486	2,239	73,856	83.7	14,370	9,679	6,623	20,251
	9 mos.	249	457,656	51,394	564,576	238,115	64,261	7,698	228,593	22,748	560,238	99.2	4,338	—37,891	—61,353	—79,599
Reading	Sept.	1,455	6,263,576	465,455	7,305,838	1,117,077	1,674,792	97,328	2,682,697	223,833	5,818,692	79.6	1,486,691	1,207,391	1,249,048	1,734,965
	9 mos.	1,459	56,596,837	4,580,497	65,524,569	10,090,049	16,203,674	876,276	25,352,998	2,011,942	54,752,924	83.5	10,781,646	8,233,238	8,349,304	12,045,786
Atlantic City	Sept.	163	97,500	132,051	252,291	81,364	22,925	3,323	174,408	4,856	286,938	113.7	—34,647	—75,762	—93,967	21,804
	9 mos.	163	983,171	1,353,160	2,522,158	625,106	209,649	34,849	1,569,448	46,563	2,487,013	98.6	35,145	—335,867	—510,552	87,174
Richmond, Fredericksburg & Potomac	Sept.	117	301,265	199,280	632,591	77,449	158,973	10,829	252,751	37,806	549,140	86.8	83,451	56,706	33,708	144,325
	9 mos.	117	4,037,352	2,529,827	8,063,238	1,146,287	1,532,491	96,677	2,849,305	346,896	6,182,514	76.7	1,880,724	1,478,785	1,015,239	1,912,283
Rutland	Sept.	413	272,575	86,166	495,951	82,433	76,334	11,231	171,569	16,037	359,631	72.5	136,320	103,781	107,681	153,696
	9 mos.	413	2,419,246	700,567	4,060,906	740,106	802,315	101,998	1,609,050	150,004	3,419,427	84.2	641,479	432,932	487,462	763,345
St. Louis-San Francisco	Sept.	5,261	4,934,431	596,300	6,050,513	814,013	939,709	123,498	1,982,428	210,890	4,090,966	67.61	1,959,547	1,594,212	1,609,996	2,256,509
	9 mos.	5,271	43,650,861	6,460,350	54,633,186	7,019,075	10,106,948	1,151,564	18,853,353	2,042,339	39,054,993	71.49	15,578,193	12,408,845	12,515,782	15,579,483
Ft. Worth & Rio Grande	Sept.	233	60,510	3,830	72,468	23,444	16,013	2,374	36,836	3,365	82,023	113.2	—9,555	—14,010	—24,708	—19,035
	9 mos.	233	520,182	37,921	630,746	184,304	137,253	26,727	348,964	39,630	735,322	116.6	—104,576	—144,879	—223,097	—112,161
St. Louis-San Francisco & Texas	Sept.	262	148,205	7,766	164,412	46,442	21,126	6,310	60,665	8,786	143,329	87.2	21,083	16,882	—13,611	31,961
	9 mos.	262	1,243,672	85,786	1,394,872	258,084	209,579	56,583	527,433	151,801	1,201,152	86.1	193,720	156,779	—104,108	17,934
St. Louis Southwestern Lines	Sept.	1,882	1,497,383	65,426	1,691,120	287,766	314,042	113,429	560,457	87,935	1,366,709	80.8	324,411	213,216	92,407	526,488
	9 mos.	1,824	15,175,982	694,241	17,118,785	2,649,867	2,711,854	992,888	5,904,703	852,183	13,214,730	77.2	3,904,055	3,114,398	1,777,368	2,560,423
San Diego & Arizona	Sept.	155	44,110	9,088	53,803	13,622	16,321	3,042	18,942	7,186	60,263	112.0	—6,460	—12,082	—10,197	—11,732
	9 mos.	155	660,397	155,554	842,086	145,119	150,209	33,680	229,566	70,971	641,196	76.1	200,890	151,753	159,835	232,505
Seaboard Air Line	Sept.	4,493	2,964,300	293,144	3,665,122	492,863	739,579	189,348	1,357,254	154,018	2,950,728	80.5	714,394	424,085	407,904	796,730
	9 mos.	4,497	29,491,033	4,514,244	37,666,995	5,149,203	6,847,356	1,798,446	13,995,651	1,546,438	29,715,559	78.9	7,951,436	5,057,841	4,527,110	8,479,182
Southern Ry.	Sept.	6,731	7,592,983	1,353,329	9,767,940	1,360,374	1,635,182	224,840	3,277,156	338,615	6,905,359	70.7	2,862,581	2,201,415	2,061,066	2,729,489
	9 mos.	6,731	69,861,756	13,444,862	90,752,819	13,651,927	17,330,814	2,117,638	31,758,762	3,270,219	68,822,100	75.8	21,930,719	15,291,242	14,034,293	22,891,063
Alabama Great Southern	Sept.	314	506,603	89,776	644,770	110,989	135,838	18,300	209,822	21,938	502,805	78.0	141,965	90,454	96,132	269,743
	9 mos.	314	4,791,113	912,210	6,140,651	1,144,554	1,416,845	177,577	1,977,348	216,029	4,987,657	81.2	1,152,994	698,539	867,449	1,916,548
Cinn., New Orleans & Texas Pacific	Sept.	338	1,169,671	131,304	1,384,917	192,707	299,588	37,998	399,309	50,581	985,052	71.1	399,865	303,434	335,521	452,107
	9 mos.	338	11,617,885	1,638,437	14,030,544	2,353,235	3,136,608	362,658	4,121,405	477,281	10,541,182	75.1	3,489,362	2,688,758	2,679,380	2,880,729
Georgia Southern & Florida	Sept.	397	204,940	38,869	264,989	55,823	56,644	1,566	94,336	2,703	213,884	80.7	51,105	26,612	34,508	19,521
	9 mos.	397	1,967,641	640,973	2,826,082	576,025	608,098	19,733	1,021,659	24,218	2,298,146	81.3	527,936	309,116	288,321	360,894
New Orleans & Northeastern	Sept.	204	289,297	40,776	355,204	51,266	71,403	10,423	108,149	13,627	258,225	72.7	96,979	50,865	25,512	91,248
	9 mos.	204	2,640,251	446,468	3,302,447	524,366	648,058	99,429	1,053,423	129,687	2,486,426	75.3	816,021	428,571	179,566	687,969
Northern Alabama	Sept.	110	69,926	2,691	75,084	19,251	3,333	1,696	25,843	2,816	52,939	70.5	22,145	17,606	436	—1,203
	9 mos.	110	700,402	30,454	755,567	183,687	30,547	18,849	256,551	27,555	517,152	68.4	238,415	188,617	21,331	123,918

Revenues and Expenses of Railways

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1930—CONTINUED

Name of road		Av. mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1929.
Southern Pacific	Sept.	9,125	$13,054,598	$2,723,044	$17,196,112	$1,749,548	$2,400,246	$348,023	$5,261,265	$626,656	$10,619,795	61.8	$6,576,317	$5,176,015	$4,603,043	$5,025,852
	9 mos.	9,124	104,437,163	26,967,937	144,005,730	18,101,027	24,809,941	3,745,216	47,639,646	5,913,691	102,490,521	71.2	41,515,209	29,791,158	25,882,169	37,085,645
So. Pacific Steamship Lines	Sept.	....	542,961	63,953	641,821	20,334	117,684	20,554	448,181	32,464	639,217	99.6	2,604	1,295	1,678	—76,665
	9 mos.	....	5,163,205	495,592	6,039,233	173,713	1,417,698	195,060	4,245,661	360,292	6,392,424	105.8	—353,191	—365,435	—345,168	—95,436
Texas & New Orleans	Sept.	4,721	4,755,116	615,283	5,835,896	735,881	812,400	160,618	1,711,728	247,976	3,661,871	62.7	2,174,025	1,766,270	1,464,333	1,330,060
	9 mos.	4,721	37,074,631	6,496,902	47,202,099	7,491,975	9,114,626	1,609,902	15,657,583	2,336,694	36,272,247	76.8	10,929,852	7,998,496	5,502,858	8,309,793
Spokane, Portland & Settle	Sept.	554	652,793	59,719	775,594	121,258	91,073	15,369	218,998	22,281	474,952	61.2	300,642	214,035	191,551	286,630
	9 mos.	554	4,848,455	697,026	6,072,202	941,358	897,754	117,517	1,933,724	208,271	4,153,600	68.4	1,918,602	1,136,293	995,383	1,773,285
Tennessee Central	Sept.	295	254,756	9,929	280,913	48,365	40,129	9,985	92,467	13,740	203,973	72.6	76,940	67,254	47,460	70,796
	9 mos.	296	2,125,254	96,203	2,344,751	442,989	367,260	84,629	832,261	126,108	1,848,210	78.8	496,541	436,082	280,943	389,895
Terminal R. R. Assn. of St. L.	Sept.	55	.....	.....	830,549	125,113	50,761	3,009	394,972	23,771	600,963	72.4	229,586	105,222	195,177	305,536
	9 mos.	55	.....	.....	7,901,095	1,174,963	749,857	27,597	3,661,985	236,307	5,878,955	74.4	2,022,140	1,031,880	1,835,791	2,853,212
Texas & Pacific	Sept.	1,955	2,421,521	330,535	2,990,508	457,007	510,090	80,287	898,515	123,049	2,066,769	69.1	923,739	778,637	652,097	691,719
	9 mos.	1,955	23,346,484	3,470,025	28,880,941	4,258,772	4,793,543	798,373	9,184,038	1,140,581	20,200,832	69.9	8,680,109	7,114,019	5,340,652	6,430,264
Texas Mexican	Sept.	162	82,690	3,476	97,122	7,264	14,232	3,208	39,718	8,264	71,860	74.0	25,262	20,178	15,897	7,898
	9 mos.	162	751,105	29,994	873,011	137,662	145,034	30,744	54,321	73,074	734,736	84.2	138,275	92,941	27,075	115,874
Toledo, Peoria & Western	Sept.	239	171,983	154	176,352	17,566	16,769	13,644	54,321	8,345	110,645	62.7	65,707	55,807	46,433	28,482
	9 mos.	239	1,474,037	2,310	1,512,301	171,820	208,335	128,655	573,201	83,572	1,165,565	77.1	346,736	287,090	202,533	377,673
Toledo Terminal	Sept.	28	.....	.....	98,511	12,745	12,995	554	41,683	4,951	72,902	74.0	25,609	15,262	32,654	36,775
	9 mos.	28	.....	.....	884,006	126,035	145,781	5,205	413,886	45,112	735,417	83.2	148,589	27,045	212,234	454,950
Ulster & Delaware	Sept.	128	32,332	11,228	79,305	16,674	13,193	1,380	43,417	3,942	78,606	99.1	699	—4,801	—7,881	—2,651
	9 mos.	128	297,392	151,052	787,894	121,698	122,980	13,076	385,594	35,340	678,688	87.1	100,206	47,506	22,129	51,911
Union R. R. of Penna.	Sept.	45	.....	.....	864,910	82,668	181,420	170	322,044	14,083	600,295	69.4	265,615	244,715	305,373	398,704
	9 mos.	45	.....	.....	7,182,348	811,305	1,503,668	1,460	2,961,999	134,022	5,408,631	75.3	1,773,717	1,521,717	2,089,314	3,092,371
Union Pacific	Sept.	3,765	9,469,703	1,087,618	11,319,993	925,214	1,905,085	145,260	2,877,416	333,673	6,354,656	56.1	4,065,337	4,357,927	3,622,061	3,435,277
	9 mos.	3,765	61,353,871	7,739,557	78,328,807	8,240,594	16,417,924	1,690,017	22,757,159	3,001,536	53,569,618	68.4	24,759,189	18,851,157	16,465,310	19,826,915
Oregon Short Line	Sept.	2,539	3,265,942	235,768	3,709,489	400,256	434,371	51,550	943,067	125,864	1,992,693	53.7	1,716,796	1,412,206	1,252,030	1,161,875
	9 mos.	2,538	20,147,624	2,334,846	24,507,000	4,094,708	3,993,147	506,860	7,411,404	1,133,885	17,511,852	71.5	6,995,148	4,254,122	3,394,157	5,467,999
Oregon-Wash. R. R. & Nav.	Sept.	2,345	2,048,116	183,839	2,438,823	352,988	317,973	81,397	810,999	121,927	1,707,998	70.0	730,825	539,650	386,002	471,485
	9 mos.	2,362	14,973,198	1,765,896	18,520,834	3,405,847	2,797,204	702,760	6,984,666	1,113,029	15,183,448	82.0	3,337,386	1,614,366	672,057	1,341,848
Los Angeles & Salt Lake	Sept.	1,229	1,473,082	308,277	1,961,131	319,479	290,783	66,429	613,377	87,368	1,444,575	73.7	516,556	369,578	217,432	323,930
	9 mos.	1,229	12,673,174	3,013,030	17,405,536	2,639,341	2,893,688	735,314	5,521,452	764,518	13,173,163	75.7	4,232,373	2,820,958	1,664,949	3,319,826
St. Joseph & Grand Island	Sept.	258	357,511	6,384	374,087	53,467	44,899	3,442	114,688	17,392	234,276	62.6	139,811	117,417	78,981	73,299
	9 mos.	258	2,484,892	68,337	2,656,330	402,800	327,291	30,637	897,447	150,034	1,821,049	68.6	835,281	664,615	456,957	497,375
Utah	Sept.	111	161,494	.....	161,724	20,198	34,241	429	34,723	6,167	95,758	59.2	65,966	54,291	43,509	52,933
	9 mos.	111	1,055,035	.....	1,060,005	183,917	293,038	3,295	267,869	54,292	802,411	75.7	257,594	193,171	74,741	367,365
Virginian	Sept.	561	1,339,369	16,170	1,435,811	110,599	237,017	15,961	286,594	34,386	682,373	47.5	753,438	583,438	686,519	679,003
	9 mos.	552	12,112,970	197,652	13,061,803	1,388,990	2,388,055	131,852	2,710,881	295,396	6,913,389	52.9	6,148,414	4,696,392	5,328,533	6,318,533
Wabash	Sept.	2,523	4,347,693	389,449	5,061,907	752,871	814,583	172,020	1,827,775	215,670	3,809,440	75.3	1,252,467	1,099,340	749,380	1,468,230
	9 mos.	2,523	40,010,146	4,203,924	47,572,985	6,041,168	8,150,974	1,717,054	18,738,440	2,105,009	36,926,908	77.6	10,646,077	8,666,999	5,426,050	10,238,917
Ann Arbor	Sept.	293	416,627	10,372	446,723	44,873	78,309	14,075	165,943	16,941	319,957	71.6	126,766	100,810	72,147	91,138
	9 mos.	293	3,543,796	106,394	3,800,341	360,874	735,046	130,574	1,565,364	136,192	2,926,565	77.0	873,776	636,188	399,433	771,392
Western Maryland	Sept.	896	1,365,809	12,482	1,502,016	201,740	276,421	47,271	370,134	43,033	932,590	62.1	569,426	479,426	480,092	605,196
	9 mos.	895	12,516,769	139,806	13,508,655	1,963,470	2,497,180	398,230	3,544,529	388,123	8,799,498	65.1	4,709,157	3,909,157	3,997,144	4,098,967
Western Pacific	Sept.	1,051	1,538,525	97,984	1,813,705	122,232	203,567	67,178	545,566	46,943	976,448	53.8	837,257	742,351	686,683	443,915
	9 mos.	1,051	9,759,167	913,118	11,675,829	2,378,786	2,061,301	630,159	4,306,737	440,397	10,139,877	86.8	1,535,952	656,398	717,640	1,628,173
Wheeling & Lake Erie	Sept.	511	1,155,113	12,226	1,252,031	175,756	338,664	35,469	391,751	40,193	981,602	78.4	270,429	155,513	182,533	486,171
	9 mos.	511	12,104,493	144,652	13,118,628	1,522,147	3,172,199	336,381	3,830,103	397,796	9,267,810	70.7	3,850,818	2,656,379	2,740,252	4,259,432
Wichita Falls & Southern	Sept.	203	65,842	181	69,480	13,173	9,613	2,973	19,592	3,616	47,485	68.34	21,995	16,776	12,670	19,540
	9 mos.	203	666,705	3,656	707,094	133,913	92,131	26,014	225,185	40,403	508,549	71.92	198,545	151,222	99,430	174,430

News of the Week

(*Continued from page 1001*)

are entering it with every confidence and prepared to meet any condition."

Freight Commodity Statistics

Revenue freight traffic carried by the Class I railroads in the second quarter of 1930 amounted to 526,556,992 tons, a decrease of 82,458,661 tons as compared with the tonnage in the second quarter of last year, according to the Interstate Commerce Commission's quarterly summary of freight commodity statistics. The tons originated totalled 297,519,052, as compared with 334,859,977 in the corresponding quarter of last year. Reductions were reported from all regions and in all commodity groups. The summary follows:

Commodity group	Tons Originated Second Quarter 1930	1929	Decrease
Products of agriculture	20,173,536	20,429,471	255,935
Animals and products	5,688,859	5,978,107	289,248
Products of mines	164,444,709	182,928,403	18,483,694
Products of forests	20,243,755	26,179,463	5,935,708
Manufacturers and miscellaneous	79,085,965	90,055,505	10,969,540
All L. C. L. freight	7,882,228	9,289,028	1,406,800
Total	297,519,052	334,859,977	37,340,925

Commodity group	Tons Carried Second Quarter 1930	1929	Decrease
Products of agriculture	42,660,358	44,434,457	1,774,099
Animals and products	10,340,602	11,042,972	702,370
Products of mines	272,696,764	310,927,152	38,230,388
Products of forests	37,976,676	51,081,899	13,105,223
Manufacturers and miscellaneous	149,318,659	175,480,670	26,162,011
All L. C. L. freight	13,563,933	16,048,503	2,484,570
Total	526,556,992	609,015,653	82,458,661

Subsidized Transport of Maritime Coal

During the close of the St. Lawrence navigation seasons of 1928-29 and 1929-30, a total of 149,684 tons of Maritime coal was moved to the central provinces by rail, under the experimental movement authorized by the Canadian Government in March, 1928. This movement permitted coal shipments from Maritime points to Upper Canada at a rate of $3 for Nova Scotian coal, and $2.10 for coal hauled from New Brunswick. The government contracted with the railway companies to defray the difference in cost between the test rate and the actual out-of-pocket expenses of the railways, this to be determined by the Board of Railway Commissioners. Last week at Ottawa the Board heard the case of the railway companies, whose representatives gave lengthy and complex statements as to the cost of conducting the experiments. The hearing was confined to the all-rail haul and to the period 1928-29.

The other section of the order-in-council which authorized this test, and which required tests to be made during the St. Lawrence navigation season, was not dealt with. This section set forth that coal should be water-borne to Montreal, and distributed from there by rail to points in Ontario and Quebec, the rate being one-fifth of a cent per ton mile less than the prevailing rate.

For moving its quota of coal, amounting in 1928 to 85,343 tons an average distance of 960.2 ton miles, the Canadian National received from the Dominion Government $236,277.82 or $2.77 a ton, after certain switching charges and other divisions had been deducted. The company claims that the actual cost, plus a reasonable profit ($75,234.63), amounted to $691,585.53.

In the two years indicated the Canadian Pacific hauled only eleven carloads of coal under the experimental rates, these coming from Minto, N. B. The amount was 531 tons.

E. P. Mallory, chief of the bureau of statistics of the C. N. R., presented the case for the railway. L. P. Forsythe, of Montreal, represented the Sydney and Louisburg line, a subsidiary of the Dominion Iron and Steel Company, while H. P. Duchemin, of Sydney, N. S., presented the case for the Government. Mr. Duchemin contended that, in addition to the Dominion Coal Company, there were fourteen independent colleries in Nova Scotia, only one of which had participated in the test. He argued that the coal had gone out in carload lots only, and that no test had been conducted with full train capacity.

The commission took the case under consideration, and will study the claims set out by the railways in order to allocate costs as required by the order-in-council.

I.C.C. Practitioners Meet

The first annual meeting of the Association of Practitioners before the Interstate Commerce Commission was held at Washington on October 30 and 31, with an attendance of several hundred of the 1,478 members which the Association has gathered in the first year of its existence. The program, in addition to the presentation and discussion of committee reports, included addresses of welcome by the Chief Justice of the United States, Charles E. Hughes, and Chairman McManamy, of the commission; the formal address of Charles C. McChord, first president of the association; an address by Robert N. Collyer, chairman of the Trunk Line Association, on Tariff Simplification and its Corollaries; by Paul M. Ripley, on the industrial traffic managers' interest in the association; and by commissioner Clyde B. Aitchison, on the annotation of the laws administered by the commission which has recently been completed under his direction. At the annual dinner on October 30, Commissioner B. H. Meyer presided as toastmaster and the speakers were: Prof. W. M. W. Splawn, of American University; Miss Amelia Earhart, assistant to the general traffic manager, Transcontinental Air Transport; Ralph Budd, president of the Great Northern, and Walter H. Newton, secretary to President Hoover.

A report of the secretary of the association showed that 4,378 attorneys have been admitted by the commission to practice before it under the new regulations put in force last year. As chairman of the executive committee John J. Esch, former member of the commission, read a history of the steps taken in the formation of the association.

Much of the discussion centered around the report of the committee on ethics and grievances, of which Henry C. Hall, former commissioner, was chairman, and which included a code of ethics. This was adopted, with some changes, after the meeting had voted to table various forms of a proposal to prevent the appearance of a practitioner in the dual character of counsel and witness. In connection with the report of the committee on procedure the meeting voted down a proposal recommending an amendment to the interstate commerce act on the ground that the association is on record as being opposed to taking part in legislative matters.

Mr. Collyer, in his talk on tariff simplification, said that while he had no objection to the use of mileage scales of rates within proper limitations, the making of rates is an art and not an exact science, and he found no justification for the extension of mileage scales to commodity rates. Mr. Budd's address was a recital of some of his observations of the Russian railways which he recently inspected as a member of a committee to make recommendations as to methods for rehabilitating the railways in that country. The recommendation was in favor of adopting the American system as distinguished from the continental system.

Officers were elected as follows: President, John J. Esch, Washington, D. C.; vice-president, eastern region, W. H. Day, Boston, Mass.; vice-president, southern region, T. J. Burke, Charleston, S. C.; vice-president, western region, Kenneth F. Burgess, Chicago, Ill.; secretary, John D. Battle, Washington, D. C.; treasurer, Karl Knox Gartner, Washington, D. C.

Railway Club Meetings

The New York Railroad Club will hold its next meeting on Friday evening, November 21, at 29 West Thirty-Ninth Street, New York City. The paper of the evening will be by H. L. Andrews, chief engineer of the Transportation Engineering Department of the General Electric Company, on the Contribution of Modern Electrical Equipment to Transportation. Motion pictures will be shown.

The November meeting of the Canadian Railway Club, Montreal, will be held on Monday evening, the 17th. The paper of the evening will be one on the Development of the Oil Engine for Railroad Service, by C. E. Brooks, chief of motive power of the Canadian National.

The Central Railway Club will hold its next meeting at Hotel Statler, Buffalo, N. Y., on Thursday evening, November 13. T. V. Buckwalter, vice-president of the Timken Roller Bearing

Company, will speak on the Timken locomotive and roller bearings.

The Railway Club of Pittsburgh (Pa.), will hold its next meeting at Fort Pitt Hotel, Pittsburgh, on Tuesday evening, November 25. The address of the evening will be by C. D. Young, general purchasing agent of the Pennsylvania, on railroad purchasing.

Origin and Distribution of Fruits and Vegetables

Rapid and efficient rail transportation has been an important factor in the development of the fresh fruit and vegetable industry during the present century. This progress is shown in a study just completed by the Bureau of Railway Economics of the origin and distribution of the 18 principal fresh fruits and vegetables produced in this country during the year 1929 and unloaded at 66 large consuming markets. "Such transportation," said a bulletin issued by the Bureau "has stimulated large increases in production, and has assisted in the expansion of markets which are frequently situated at long distances from the producing regions.

"Domestic fresh fruits and vegetables unloaded in the 66 markets in 1929 aggregated 615,387 carloads, an increase of 19,284 carloads or 3.2 per cent over 1928, and an increase of 31,035 carloads or 5.3 per cent over 1927. California led all states as a source of supply in 6 of the 18 products. This state supplied practically all of the lemons unloaded in the 66 markets; about 92 per cent of all the grapes; nearly 70 per cent of the cantaloupes; about 66 per cent of the lettuce; over 63 per cent of the oranges, and more than one-half of the pears.

"Florida led in 3 of the 18 products, furnishing 87 per cent of the total grapefruit; 37 per cent of the celery, and 28 per cent of the tomatoes. The leading states supplying the remaining products were—Georgia, which furnished 42 per cent of the watermelons and 27 per cent of the peaches; Washington, 34 per cent of the apples; Louisiana, 17 per cent of the strawberries; New York State, 24 per cent of the cabbage; Texas, 22 per cent of the onions; Maine, 23 per cent of the white potatoes; Virginia, 29 per cent of the sweet potatoes, and Idaho, 36 per cent of the plums and prunes."

New York city constituted the largest market, there having been unloaded 130,702 cars or over 21 per cent of the total unloads. Chicago ranked second with 63,108 or 10 per cent. Other cities followed in the order named—Philadelphia, Boston, Detroit, Pittsburgh, Cleveland, St. Louis and Los Angeles.

Of all fresh fruits and vegetables, potatoes ranked first, there having been unloaded at the 66 markets in 1929, 138,937 carloads of white potatoes, an increase of nearly three per cent over both 1928 and 1927; sweet potatoes, 14,952 cars, an increase of 2.4 per cent over 1928.

While reports as to the use of trucks for the movement of fresh fruits and vegetables are not complete for the 66 principal markets, tentative reports show an increase in the use of such means of transportation, large quantities of fresh fruits and vegetables having been received by truck at 16 of the 66 markets. The market receiving the greatest quantity by truck was Los Angeles, where the total was equivalent to 21,405 rail carloads. This compared with 17,044 cars that entered that market by rail. At Los Angeles, truck unloads exceeded rail unloads for 13 of the 18 commodities, the relationship of rail and truck unloads to total carloads for the 18 commodities combined at Los Angeles having been 44.3 and 55.7 per cent, respectively. The record at Salt Lake City was almost as striking: truck unloads 50.1 per cent, rail unloads 49.9 per cent. At Newark, N. J., the percentage of truck to total unloads was 29.8 per cent; at Denver, 21.4 per cent; at Portland, Oregon, 12.1 per cent; Cincinnati, ten per cent; Boston, nine per cent, and New York and Chicago, six per cent, while for the remaining cities, the ratio of truck to total unloads was one per cent or less.

Rates on Barge Traffic at St. Paul

The Interstate Commerce Commission has issued a report, on complaints filed by the city of St. Paul and the Inland Waterways Corporation, finding the charges for moving carload shipments between the terminal of the Mississippi-Warrior Barge Service at St. Paul, Minn., and industries at Minnesota Transfer, Minn., to be unreasonable and unduly prejudicial to the barge line and unduly preferential of all-rail carriers. The commission also found the charges unduly prejudicial of shippers or consignees at Minnesota Transfer to the undue preference of those located within the switching district of St. Paul. The report found the movement between the barge terminal and industries on the Transfer to be terminal switching, for which it said a charge of $4 a car appears proper, and it also approved a charge of $6.30 per car for movement between Hoffman yard and industries at Minnesota Transfer, but no order was issued. Since the hearing the rail carriers involved have established joint rates in interstate traffic handled by the barge line to and from Minnesota Transfer.

Proposed Abandonment of South Park Passenger Trains

A hearing on the application of the Colorado & Southern for permission to abandon all passenger train service on its Denver-Leadville line, known as the South Park branch, was held by the Public Utilities Commission of Colorado at Denver on October 29. This is the second attempt made by this railroad to abandon the service, the application last year being denied by the Interstate Commerce Commission. The applicant claims that since the development of automobile travel over the roads of the region served by the line, there is no longer any public necessity for passenger train service. Since the road was built in 1884, its revenues have never equaled the operating costs, and during the last 10 years the annual deficit of this branch has averaged $400,000. The daily passenger train service alone has produced revenue $40,000 less than the actual cost of operation. Those protesting the discontinuance of the service maintain that automobile and bus transportation cannot properly handle the passenger traffic, especially in the winter months, and that the railroad service is a necessity.

B. & M. Offers Stock to Employees

The Boston & Maine has offered an opportunity to the 20,000 officers and employees of the Boston & Maine to increase present holdings in the railroad's prior preference stock, and for other employees to become stockholders. For the third time in four years, the Boston and Maine directors have voted to make this 7 per cent cumulative stock available to employees on monthly payments at less than the current market price.

The stock, quoted on the Boston Stock Exchange at about $107 per share, is offered to the employees at $103. Payments in from 16 to 23 months are provided, with 7 per cent interest credited on the purchase price to further reduce the cost, which on the 23 months basis would be only $96.33 per share, according to the announcement. Any officer or employee on the active payroll of the Boston & Maine may subscribe. President French's announcement states that in the first nine months of 1930 the dividend for the whole year was earned more than 2¾ times, notwithstanding the marked decrease in gross revenues during that period.

Clerks' Union Attacks "Unfair Competition"

(*Continued from page 998*)

"We strongly urge that immediate steps be taken by state and national agencies to determine the true cost to the public of providing and maintaining highways that are used by operators of motor trucks and motor coaches.

"Further regulation by state and national government should require these motor trucks and motor coaches to standardize rates and service, to provide for the safety of passengers and goods transported, and to safeguard the lives and property of other users of the highways.

"The principles underlying present railway labor laws should be extended to cover the employees of motor truck and motor coach operators.

"Freight forwarding or carloading companies should be brought under the jurisdiction of the Interstate Commerce Commission and the Board of Mediation, through amendments to the Interstate Commerce Act and the Railway Labor Act. Only in this manner can the evasion and virtual nullification of present railway regulation be prevented, and the public protected against a recurrence of the abuses which existing laws were designed to correct."

Supply Trade

The Jones & Laughlin Steel Corporation plans the construction of a one-story storage and distributing unit at Chicago to cost $100,000.

C. A. Wilmot, representative of the **Wickwire Spencer Steel Company,** with headquarters in New York, has been appointed assistant sales manager in charge of structural products, with headquarters at Chicago.

Owen H. Persons, assistant manager of sales of the **American Steel & Wire Co.,** with headquarters at Philadelphia, Pa., has resigned to become general manager of sales of the **Edgecomb Steel Company,** with headquarters at Philadelphia.

Clyde C. Elmes has been elected vice-president and general manager of **The Dallett Company,** Philadelphia, Pa., manufacturers of pneumatic tools, machinery and electric equipment. Previous to Mr. Elmes' new appointment he was superintendent of the Baldwin Locomotive Works.

The **American Manganese Steel Company,** Chicago Heights, Ill., has appointed the **Southern Tractor Supply Company,** 406 Geer building, Durham, N. C., its representative for the District of Columbia, North Carolina, South Carolina, Eastern Tennessee, Virginia and West Virginia.

Pickands, Mather & Co., Cleveland, Ohio, has acquired the common shareholdings of the Davey group of the **Empire Steel Corporation,** Mansfield, Ohio, and the large holdings of the common stock of the latter will, under a trust agreement, be placed in the hands of the voting trustees.

S. L. Poorman, representative in New England of the **Westinghouse Air Brake Company,** Wilmerding, Pa., has changed his headquarters from Boston to New York; **John W. Henry,** mechanical expert formerly at Washington, D. C., has been transferred to the eastern district with headquarters at New York; **C. O. DeWitt** has been transferred from the engineering department in Wilmerding to the New York office as assistant to the district engineer; **T. W. Baldwin** has re-entered the employ of the company as mechanical expert at St. Paul, Minn., and **D. R. Collins,** formerly a locomotive engineman on the Denver & Salt Lake, has been appointed mechanical expert with headquarters at Denver, Colo.

Obituary

Addison H. Beale, president of the A. M. Byers Company, Pittsburgh, Pa., died on October 28.

George Lee Morton, vice-president of the Galena Oil Corporation, died suddenly on the morning of October 19 in New York while on a business trip. Colonel Morton, who was a resident of Atlanta, Ga., had been attending a business conference until the evening before his death which occurred while he was seated in a chair conversing with one of his associates visiting him in his hotel room. Colonel Morton was born in Wilmington, N. C., on December 10, 1856. He received his early education at the Wilmington public schools and at Wilson Collegiate Institute, later earning his bachelor of arts degree at the University of North Carolina with the class of 1885. He engaged in the naval stores' business and about 37 years ago entered

George Lee Morton

the service of the Galena-Signal Oil Company, now the Galena Oil Corporation, becoming vice-president of that organization in 1918. He was interested in public affairs having served in North Carolina both as speaker of the house and president of the senate of that state. Later he was a member of the governor's staff and during the Spanish American War served as lieutenant in the United States Navy, commanding the U. S. S. Nantucket, the flagship of 26 coast defense vessels. Colonel Morton was well known by those identified with America's steam and electric transportation systems during the past quarter of a century. He took an active part in the development of trade associations in the steam and electric railway field, having been founder and several times president of the Southern & Southwestern Railway Club.

Trade Publication

THE CLEANING OF METAL.—Processes for the cleaning of metals and materials, with practical suggestions for their use, are described by Robert W. Mitchell, Ph.D., in a 76-page illustrated booklet issued by the Magnus Company, 420 Lexington avenue, New York. The treatise is in the nature of a handbook, being a general reference and guide to allied process problems.

Equipment and Supplies

Locomotives

THE GREAT NORTHERN has constructed 15 locomotives in its own shops during 1930 as part of its program to construct 25 class 0-7 Mikado type locomotives from parts of M-2 Mallet type locomotives and to construct six new R-2 Mallet articulated type locomotives in its Hillyard shops. On October 31, five of the R-2 type locomotives had been completed and the last one will be turned out early in November. Ten of the 0-7 type locomotives are now completed and three more will be completed by the end of the year. Work on the remaining 12 will be carried out next year.

Freight Cars

THE CALORIC COMPANY is inquiring for 10 tank cars of 50 tons' capacity.

THE READING has authorized the construction of 20 caboose cars in its own shops.

THE CHICAGO & ILLINOIS MIDLAND is inquiring for 400 gondola cars and 400 hopper cars.

THE GREAT NORTHERN is applying steel underframes to box cars at the rate of 250 per month.

THE ATCHISON, TOPEKA & SANTA FE is inquiring for 1,000 box cars of 50 tons capacity, 400 refrigerator cars of 40 tons capacity, 100 refrigerator cars of 50 tons capacity, 22 all steel caboose cars, and 10 drovers cars.

Passenger Cars

THE DENVER & RIO GRANDE WESTERN is inquiring for two dining cars.

THE INTERBOROUGH RAPID TRANSIT COMPANY is inquiring for 280 subway cars.

THE ATCHISON, TOPEKA & SANTA FE is inquiring for two cafe-lounge cars and 16 gas-electric rail motor cars.

THE ATCHISON, TOPEKA & SANTA FE has ordered 10 horse palace cars from the Pullman Car & Manufacturing Corporation. Inquiry for this equipment was reported in the *Railway Age* of September 6.

Iron and Steel

THE BALTIMORE & OHIO has ordered from the Fort Pitt Bridge Works 150 tons of steel for a bridge at Hays, Pa.

THE ERIE has ordered from the Phoenix Bridge Company 475 tons of steel for two bridges at Hackensack, N. J.

Construction

CANADIAN NATIONAL.—In connection with the construction of the main viaduct leading from Victoria bridge to its new central passenger terminal, an integral part of its Montreal, Que., terminal improvements, this company has awarded to the Dominion Bridge Company of Montreal the contract for the superstructure of that section of the viaduct between the north side of St. Antoine street and the south side of Ottawa street. The railroad company has also prepared plans for the construction of a new station at St. John, N. B., as part of a general program of improvement to its existing facilities in that city. The Canadian National has further been authorized by the Public Service Commission of New York to use company forces in doing the work necessary to carry four tracks across Austin street, Buffalo, N. Y., in addition to the three tracks included in the original elimination plan. The cost of this extra work is estimated at approximately $70,000.

CHICAGO, ROCK ISLAND & PACIFIC.—This company has applied to the Interstate Commerce Commission for authority to construct a spur track of 15,200 feet at Bowen, Mo.

CINCINNATI UNION TERMINAL.—A contract for the construction of the Western Hills viaduct at Cincinnati, Ohio, as a part of the Union Terminal project in that city has been awarded to the MacDougal Construction Company, Atlanta, Ga.

DELAWARE, LACKAWANNA & WESTERN.—The Public Service Commission of New York has ordered the reconstruction of the railroad bridge carrying the D., L. & W. tracks over the Pavilion-Greigsville county highway, York, N. Y.

DENVER & RIO GRANDE WESTERN.—The Colorado state highway department closed bids on November 7 for the construction of a viaduct over the tracks of this company near Florence, Colo. Half of the cost of $100,000 will be borne by the railroad.

ILLINOIS CENTRAL.—The Louisiana Public Service Commission has directed this road to file with it, by January 24, 1931, detailed plans and specifications for the construction of a new union station at New Orleans, La.

LEHIGH VALLEY.—The Cayuta Creek road crossing of this company's tracks, two miles north of Waverly station, Barton, N. Y., has been designated for elimination by the Public Service Commission of New York. The project involves the construction of a highway bridge over the railroad and the creek, at an estimated cost of $189,000.

MICHIGAN CENTRAL.—This company has been authorized by the Interstate Commerce Commission to construct a new line from a point on its Grand Rapids division westerly 2.95 miles to a connection with what was formerly the Michigan railroad, an interurban electric line, and to reconstruct that company's old line northerly to Bridge street, Grand Rapids, Mich., a total distance of 10.25 miles. The cost of the new line is estimated at $184,835 and that of reconstructing the old Michigan railroad line at $958,000. The new extension will be operated by the New York Central and will provide switching service in and near Grand Rapids.

MISSOURI PACIFIC.—St. Louis county, Mo., has requested the Missouri Public Service Commission to authorize the construction of a highway subway under the tracks of this company at Big Bend road, two miles east of Valley Park, Mo., at a cost of about $36,800.

MISSOURI PACIFIC.—This company plans the construction of a grain elevator of 2,500,000 bu. capacity at Kansas City, Mo., at a cost of $1,800,000. The project will involve the construction of about eight miles of yard trackage and the elevator when completed in July, 1931, will be leased to the Continental Export Company.

MORGAN'S LOUISIANA & TEXAS.—The Interstate Commerce Commission has recently modified its order of October 31, 1929, authorizing this company to extend its Houma branch from Houma, southeasterly 7.3 miles to Ashland, Terrebonne Parish, La., so as to cover only that portion of the proposed construction from Houma to a point of connection with a narrow gage railway owned by the South Coast Company, 4.26 miles. The commission has also authorized postponement of the construction of the remainder of the proposed extension, from the last-named point to Ashland, 3.04 miles.

NEW YORK CENTRAL.—The Public Service Commission of New York has advised this company that it does not consider excessive the low bids of $141,799 submitted by the Walsh Construction Company, Syracuse, N. Y., for the elimination of three grade crossings in Frankfort, N. Y., as described in the *Railway Age* of September 6, and by the Hecker-Moon Company, Cleveland, Ohio, of $27,593, for the construction of a signal station in connection with the elimination of grade crossings in Buffalo, N. Y., as described in the *Railway Age* of September 27. The commission has also designated for elimination a grade crossing at Main street, Philadelphia, N. Y., and another crossing located on the Clover street county highway 1½ miles west of Pittsford, N. Y. Both elimination projects will be accomplished by carrying the highways over the grade of the railroad, at costs of $114,500 and $147,000, respectively.

NEW YORK, NEW HAVEN & HARTFORD.—The storage warehouse which this company is building, under contract with the Austin Company of Cleveland, Ohio, for the use of the Great Atlantic & Pacific Tea Company, on East One Hundred and Thirty-Second street, New York City, will, according to latest available information, be of brick and steel construction, 110 ft. by 327 ft. It will be served on one side by a nine-car side track and on the other by a 53-ft. concrete driveway, also served by a nine-car team track. When completed, about February 1, 1931, the building will be leased for a period of 10 years, with option for renewal, to the A. & P., which will install necessary refrigerating equipment.

PENNSYLVANIA.—This company has recently awarded contracts as follows: For the construction of an extension to its existing grain elevator at Erie, Pa., to provide additional storage capacity of 1,500,000 bu., at a cost of $223,000, to the Rust Engineering Company, Pittsburgh, Pa.; for improvements to four 17-ton ore unloaders on dock No. 11, Cleveland, Ohio, at a probable cost of $106,000, to the Wellman Engineering Company of Cleveland, and for the construction of an undergrade bridge at Bloomsdale road, Bristol, Pa., at an estimated cost of $266,000, to Harry F. Curtis, New York.

WABASH.—The Missouri Public Service Commission has been asked by St. Louis county, Mo., to authorize the elimination of a grade crossing in Ferguson, Mo., by the construction of a highway subway at the intersection with the tracks of this railroad at a cost of $63,600, half of which cost would be borne by the county.

C. N. R. Speeds Work to Relieve Unemployment

Advancing its program of capital expenditures by several months in order to relieve anticipated unemployment during the coming winter, the central region of the Canadian National now has under way, or will begin in the near future, construction work requiring a total expenditure of about $4,000,000. This is exclusive of all work now under way on the Montreal terminal improvements, but does include a number of smaller projects within the region previously reported in the *Railway Age*. The most important single feature of the new work is the Brantford cut-off, a new six-mile line to be constructed to eliminate heavy grades near Brantford, Ont. Work on the station and grade crossing eliminations at Hamilton, Ont., described in the *Railway Age* of January 18, page 220, will be vigorously prosecuted. In Toronto, Ont., work has already begun on a $90,000 stores building at Fleet and Spadina streets, and on grade separation projects in the northwest part of the city and at the foot of Bathurst street. Two subway projects at London, Ont., involve from six to eight months' work, and at Oshawa, Ont., contractors will begin almost immediately on the construction of a subway at Simcoe street. The station at

Levis, Que., is to be rebuilt and extended at a cost of $75,000, while at Becancour, Que., a new bridge is to be constructed over the Becancour river, involving new abutments and two new piers, the raising of five other piers and replacement of deck girders by plate girders. At Sudbury, Ont., a wooden trestle is to be replaced by a concrete viaduct, and another new concrete bridge will be built over the Oshannagana river at Ostrom, Ont. Grade crossing separation projects, most of them in connection with the Ontario Department of Highways, are planned or under way at Trenton, Ont., on the Toronto-Montreal highway and on the Ferguson highway near Scotia Junction, while additional subway work is planned at Canardiers road, in the suburbs of the city of Quebec.

Elimination Planned for 84 New York City Grade Crossings

A program for the elimination of 84 grade crossings in 1931, at an estimated cost of $27,100,000, has been announced by the Transit Commission of New York City as virtually the final step toward doing away with these hazards within the city limits. The program, which must be submitted to the 1931 state legislature for approval, would furnish employment for 10,000, said William G. Fullen, chairman of the commission, and brings the total cost for elimination of crossings—completed, under way and proposed—to $173,000,000. The only crossings not covered in these three classifications are on the Whitestone, Evergreen and Creedmoor branches and the Cedarhurst cut-off of the Long Island. Removal of eight grade crossings on the Whitestone branch has been deferred pending the decision of the Interstate Commerce Commission on the railroad's application for abandonment of the line, and in the other cases train operation is infrequent and at low speed. Of the $27,100,000 expenditure proposed for 1931 the state would pay $13,279,000, the city $271,000 and the railroads $13,550,000. Included are crossings on the Long Island, the Staten Island Rapid Transit (Baltimore & Ohio) and the New York Rapid Transit Corporation (B. M. T.)

There are now under way elimination projects having a total estimated cost of $125,000,000, others costing $16,000,000 have been ordered and are soon to be started, and work amounting to $5,500,000 is awaiting final order. Included in the first group are the Long Island's Jamaica elimination and the West Side improvements of the New York Central.

The list of crossings proposed for elimination, together with the costs and portions chargeable to the state, city and railroad, were announced as follows by the Transit Commission:

Long Island

Crossing	Total cost	State	City	Railroad
Old Southern Division (Montauk Division), nine crossings—114th ave., New York blvd., Smith st., Baisley blvd., Farmers blvd., 140th ave., 141st blvd., Springfield blvd. and 224th st.	$3,000,000	$1,470,000	$30,000	$1,500,000
Rosedale (Montauk Division), three crossings—Brookdale blvd., Cross Island blvd and Hook Creek blvd.	2,000,000	980,000	20,000	1,000,000
Laurel Hill blvd. (Montauk Division)	500,000	245,000	5,000	250,000
Maspeth (Montauk Division), four crossings—43d st., 49th st., Maspeth ave. and Flushing ave.	2,000,000	980,000	20,000	1,000,000
Long Island City (Main Line and Montauk Division), four crossings—Vernon ave., Borden ave., 11th st. and 51st ave.	1,200,000	588,000	12,000	600,000
Greenpoint ave. (Montauk Division)	200,000	98,000	2,000	100,000
Bushwick Branch, eignt crossings—Morgan ave., Varick ave., Woodward ave., Metropolitan ave., 54th st., 55th st., 56th st. and Flushing ave.	2,500,000	1,225,000	25,000	1,250,000
Fifth st. (West st.), North Shore Freight Branch	500,000	245,000	5,000	250,000
Glendale (Montauk Division), four crossings—73d st., 88th st., Trotting Course lane and Trotting Course lane on Rockaway Beach Division	1,000,000	490,000	10,000	500,000
Little Neck (North Side Division), one crossing—250th st., Old House Landing road	300,000	147,000	3,000	150,000
Aqueduct (Rockaway Division), three crossings—Centerville ave., 135th drive and North Conduit ave.	1,000,000	490,000	10,000	500,000
255th st., Little Neck pkwy. (Creedmoor Branch)	300,000	147,000	3,000	150,000
Totals, Long Island	$14,500,000	$7,105,000	$145,000	$7,250,000

Staten Island Rapid Transit

Oakwood Heights, three crossings—Guyson ave., Buffalo st. and Coles Lane	500,000	245,000	5,000	250,000
Great Kills, two crossings—Great Kills rd. and Gifford's Lane	900,000	441,000	9,000	450,000
Eltingville, three crossings—Wilson ave., Richmond ave. and Washington ave.	800,000	392,000	8,000	400,000
Annadale rd.	300,000	147,000	3,000	150,000
Huguenot ave.	300,000	147,000	3,000	150,000
Richmond Valley rd.	500,000	245,000	5,000	250,000
Tottenville, eight crossings—Bethel ave., Arthur Kill rd., Weir Lane, Fisher ave., Tracey ave., Wood ave., Johnson ave. and Main st.	1,500,000	735,000	15,000	750,000
Stapleton, six crossings—Victory blvd., Wave st., Medway st., Hammona st., Canal st. and Thompson st.	2,500,000	1,225,000	25,000	1,250,000
Mariner's Harbor, twelve crossings—Jordan st., Douglas st., Newark ave., Morningstar rd., Granite ave., Lake ave., Simonson ave., Van Name ave., Van Pelt ave., De Hart ave., Union ave. and Harbor rd.	2,000,000	980,000	20,000	1,000,000
Rosebank, three crossings—Maple ave., Chestnut ave. and St. Mary's ave.	1,000,000	490,000	10,000	500,000
Arrocher (Cedar ave.)	500,000	245,000	5,000	250,000
South Beach (Sand Lane)	500,000	245,000	5,000	250,000
New Brighton (Jersey st.)	300,000	147,000	3,000	150,000
Totals, Staten Island	$11,600,000	$5,684,000	$116,000	$5,800,000

Financial

ATCHISON, TOPEKA & SANTA FE.—*Bond.*—The Interstate Commerce Commission has authorized the Rio Grande, El Paso & Santa Fe to issue a registered general mortgage 6 per cent, series B, bond for $500,000 to mature in 1953, the bond to be delivered to the A. T. & S. F. in exchange for a first mortgage bond of like amount which matured on October 1, 1930.

BRIDGTON & HARRISON.—*Abandonment.*—The Interstate Commerce Commission has authorized this narrow-gage line to abandon that portion of its railroad extending from Bridgton, Me., to Harrison, 3.9 miles.

CENTRAL OF ARKANSAS.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon its entire line from Ola to Plainview, Ark., 6.92 miles.

CHICAGO & ALTON.—*Protective Committee.*—A stockholders' committee has been formed and is seeking deposits of preferred and common stocks of this company under the acting chairmanship of E. A. Pierce. A statement issued by the committee says that it has notified the Interstate Commerce Commission of its desire to be heard should an application be made to carry into effect any plan of the Baltimore & Ohio to acquire control of the Alton. The Bank of Manhattan Trust Company, New York, and the National Bank of the Republic, Chicago, have been named as official depositories of this committee.

CHICAGO, BURLINGTON & QUINCY.—*Acquisition.*—This company has applied to the Interstate Commerce Commission for authority to acquire and operate the line of the Lowell & Southern, 3.7 miles, at a price of $99,147.

DULUTH, SOUTH SHORE & ATLANTIC.—*Abandonment.*—The Interstate Commerce Commission has authorized this company to abandon that portion of its line extending from Marquette, Mich., to Queen Mine in Negaunee, 11.1 miles, together with an 0.5 mile line extending to Eagle Mills.

FLORIDA CENTRAL & GULF.—*Abandonment.*—Examiner J. S. Pritchard of the Interstate Commerce Commission has recommended in a proposed report that the commission authorized this company to abandon its entire line, from Inglis to Hernando, Fla., 29.54 miles.

GREAT NORTHERN.—*Equipment Trust.*—The Interstate Commerce Commission has authorized this company to assume obligation jointly as guarantor with the Western Fruit Express in respect of $405,000 of the latter company's equipment trust of 1930, series E, 4½ per cent serial trust certificates, maturing from 1931 to 1945. The issue is offered for sale to the highest bidder, Salomon Bros. & Hutzler,

at 100.228, making the average cost approximately 4.2147 per cent.

INTERMOUNTAIN. — *Abandonment.*—Examiner R. R. Molster of the Interstate Commerce Commission has recommended in a proposed report that the commission authorize the abandonment of part of this company's line, from Steirman to Centerville, Ia., 13.3 miles.

LEHIGH & NEW ENGLAND.—*Equipment Trust.*—The Interstate Commerce Commission has authorized this company to assume obligation for $800,000 of its series G, 4½ per cent equipment trust certificates, maturing in instalments from 1931 to 1945, the certificates to be sold to the highest bidder.

MINNEAPOLIS & ST. LOUIS.—*Receiver's Certificates.*—The Interstate Commerce Commission has authorized the receiver of this company to renew or extend the maturity of $300,000 of its receiver's certificates which will mature within the next three months. The certificates now outstanding bear interest at rates varying from 5 to 6 per cent.

NASHVILLE, CHATTANOOGA & ST. LOUIS. —*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon branch lines from Centreville to Rochelle and from Stewart to Arnold, Tenn., 5.72 and 2.64 miles, respectively.

NEW YORK CENTRAL.—*Abandonment.*—This company and the Michigan Central have applied to the Interstate Commerce Commission for authority to abandon part of the East Jordan branch of the Michigan Central, from Marble to East Jordan, Mich., 6.5 miles.

NEW YORK CENTRAL.—*Consolidation.*—One of the provisions under which the Interstate Commerce Commission permitted this company to lease its subsidiaries, chief among which are the Cleveland, Cincinnati, Chicago & St. Louis and the Michigan Central, was the provision that certain short line railroads be also included. One of these was the Fonda, Johnstown & Gloversville. This latter company and the New York Central have, however, negotiated a mutually satisfactory agreement with relation to interchange traffic, with the Fonda line retaining its independence; and the Interstate Commerce Commission has eliminated the requirement that the Fonda line be acquired by the New York Central. The commission, however, has reserved the right to inquire into the legality and propriety of the terms of the agreement between the Fonda line and the New York Central.

OREGON SHORT LINE.—*Abandonment.*—The Interstate Commerce Commission has authorized this company to abandon its line extending from Blazon Jct., Wyo., southerly to Cumberland, 7.4 miles.

PITTSBURGH & WEST VIRGINIA.—*Notes.* This company has applied to the Interstate Commerce Commission for authority to borrow $4,000,000 on four-month 4½ notes, to provide funds to be used in the construction of the Donora Southern and Connellsville extensions.

SEABOARD AIR LINE.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to procure the authentication and delivery of $1,710,500 of first and consolidated mortgage 6 per cent bonds, to reimburse its treasury, and to pledge the bonds as collateral for short-term notices.

SUMPTER VALLEY.—*Abandonment.*—Examiner O. D. Weed of the Interstate Commerce Commission has recommended in a proposed report that the commission authorize the abandonment of part of this company's line, from Bates to Prairie City, Ore., 20 miles.

SUSQUEHANNA RIVER & WESTERN.—*Abandonment.*—The Interstate Commerce Commission has authorized the owners of this property and the railroad company to abandon the operation of this line of railroad extending from Blain, Pa., to New Germantown, 4 miles.

WESTERN PACIFIC.—*Debentures.*—This company has applied to the Interstate Commerce Commission for authority to issue $5,000,000 of 5 per cent gold debentures, the proceeds to be used in connection with the work on the northern California extension.

WISCASSET, WATERVILLE & FARMINGTON. —*Abandonment.*—The Interstate Commerce Commission has authorized this company to abandon as to interstate and foreign commerce its 2-ft.-gage line extending from Wiscasset, Me., to Albion, 43.5 miles.

Average Prices of Stocks and of Bonds

	Nov. 5	Last week	Last year
Average price of 20 representative railway stocks.	95.48	99.40	125.73
Average price of 20 representative railway bonds.	94.13	94.28	91.27

Dividends Declared

Bangor & Aroostook.—Common, $.87, quarterly; Preferred, $1.75, quarterly, both payable January 1 to holders of record November 29.

Delaware & Hudson.—$2.25, quarterly, payable December 20 to holders of record November 26.

Georgia Southern & Florida.—First Preferred, $2.50, payable November 26 to holders of record November 12. Dividend on the Second Preferred stock has been omitted.

Maine Central.—Common, $1.25, quarterly, payable January 2 to holders of record December 15; Preferred, $1.25, quarterly, payable December 1 to holders of record November 15.

New York, Chicago & St. Louis.—Common and Preferred, $1.50, quarterly, payable January 2 to holders of record November 15.

THE NUMBER OF TRAINS on the railroads of the British Isles on which dining or buffet cars are in operation, in the summer, is 764, a number which, says the Railway Gazette (London) is astonishingly large. At the outbreak of the war, 1914, there were less than 500 trains thus equipped, and at the end of the war this number had been reduced to 54. In the rapid increase since 1918, the British Pullman company has taken a large part, 210 of the present 764 runs being operated in Pullman cars. Some of the Pullman restaurant cars serve refreshments to passengers in ordinary coaches.

Railway Officers

Executive

Frank G. Minnick, general manager of the Pittsburgh & Lake Erie and the Lake Erie & Eastern, has been appointed special assistant to vice-president, with headquarters as before at Pittsburgh, Pa.

Mrs. William Boyce Thompson has been elected chairman of the board of directors of the Magma Arizona and **Charles F. Ayer,** vice-president, has been appointed president, succeeding **William Boyce Thompson,** deceased, who held both of these positions. Mr. Thompson died on June 27.

Financial, Legal and Accounting

B. F. Swisher has been appointed general counsel of the Waterloo, Cedar Falls & Northern, succeeding **Chas. E. Pickett,** deceased.

Thomas M. Prentice, assistant to comptroller of the New York, New Haven & Hartford, retired on October 31, after 52 years of service.

Pomeroy Nichols, superintendent of terminals of the Atlantic Coast Line at Port Tampa, Fla., has been appointed treasurer, succeeding **John T. Reid,** deceased. His headquarters are located at Wilmington, N. C. When Mr. Nichols was appointed to his former position in the early part of this year, his photograph, together with a biographical sketch of his railway career, was published in the *Railway Age,* issue of March 8, page 626.

Operating

Frank L. Foster, assistant superintendent freight transportation of the Pittsburgh & Lake Erie and the Lake Erie & Eastern, has been promoted to superintendent freight transportation, with headquarters at Pittsburgh, Pa., as before.

F. A. Baker, trainmaster on the Plains division of the Panhandle & Santa Fe at Amarillo, Tex., has been transferred to the Slaton division at Slaton, Tex., succeeding **A. J. Cleary,** who has resigned to become assistant to the president of the Wichita Transportation Company at Wichita, Kan.

Michael A. Smith, superintendent, motive power, of the Pittsburgh & Lake Erie and the Lake Erie & Eastern, has been appointed general manager, and **James L. O'Toole,** superintendent, freight transportation, has been appointed assistant to general manager.

Both will have headquarters at Pittsburgh, Pa., as before.

Frederick J. Freese, trainmaster of the Evansville division of the Chicago & Eastern Illinois, at Danville, Ill., has been promoted to assistant superintendent of the St. Louis division with headquarters at St. Louis, Mo., succeeding **Sampson S. Huffman,** deceased. **W. C. Jennings,** trainmaster at Villa Grove, Ill., has been transferred to Danville to succeed Mr. Freese. **Glenn S. Henderson,** assistant trainmaster, has been promoted to trainmaster of the Illinois division at Villa Grove, succeeding Mr. Jennings.

Traffic

K. F. Poelling has been appointed general agent of the Louisiana & Arkansas and the Louisiana, Arkansas & Texas, succeeding **E. C. Marens,** resigned. Mr. Poelling's headquarters will be located at Shreveport, La.

Engineering, Maintenance of Way and Signaling

C. T. Jackson, special engineer of the Eastern lines of the Chicago, Milwaukee, St. Paul & Pacific, has been appointed district engineer of the Southern district, with headquarters as before at Chicago, succeeding **D. C. Fenstermaker,** who has been assigned to other duties. **C. J. Swane,** division engineer on the Western lines at Lewistown, Mont., has been transferred to the newly created Milwaukee division, with headquarters at Wilwaukee, Wis.

H. W. Lewis, signal engineer of the Lehigh Valley, has been appointed engineer of signals and telegraph following the consolidation of the signal and telegraph departments of the Lehigh Valley on November 1. **J. F. Caskey,** superintendent of telegraph, and **W. J. Kocher,** assistant signal engineer, have been appointed assistant engineers of signals and telegraph. Each of these officers will have headquarters as before at Bethlehem, Pa. The positions of signal engineer, superintendent of telegraph and assistant signal engineer have been abolished.

H. W. Lewis

Mr. Lewis was born on April 4, 1868, at Gwynedd, Montgomery County, Pa., and received his education at the North Wales Academy and School of Business. He first entered railway service as an assistant towerman on the Philadelphia & Reading (now the Reading) in 1884, and was employed by that road for about 10 years as towerman, telegraph operator and station agent. In January, 1894, Mr. Lewis entered the service of the New York Life Insurance Company as a special agent, but six months later he returned to railroad work as an operator for the Lehigh Valley, being appointed a signal inspector in May, 1895, and being promoted to division signal inspector five years later. In March, 1902, Mr. Lewis was appointed signal supervisor on the New Jersey and Lehigh division with headquarters at Easton, Pa., and in October, 1906, he was promoted to signal engineer, the position he held until his recent promotion.

Mechanical

W. G. Fifield has been appointed road foreman of engines of the Portland division of the Southern Pacific, succeeding **R. R. Spanger.** His headquarters will be located at Portland, Ore.

Karl Berg, assistant superintendent motive power of the Pittsburgh & Lake Erie and the Lake Erie & Eastern, has been promoted to superintendent, motive power, with headquarters at Pittsburgh, Pa., as before.

Joseph Schneeberger, who has been promoted to shop superintendent of the Chicago & Alton, with headquarters at Bloomington, Ill., has been connected with that road for about 25 years. He was born at Bloomington, Ill., and entered railway service in 1903 as a machinist apprentice on the Alton at Bloomington. In 1909, after completing his apprenticeship on that road and serving for a number of years as a machinist, Mr. Schneeberger became a machinist on the Colorado & Southern at Pueblo, Colo., and later on the Union Pacific at Ellis, Kan. Later he returned to the Alton at Bloomington and in 1912 was appointed roundhouse gang foreman. He was transferred to the locomotive shop at Bloomington in 1914, then being promoted to general erecting foreman in 1924. In 1925 he was advanced to general machine foreman and in 1928 to assistant shop superintendent, holding the latter position until his promotion to shop superintendent.

Joseph Schneeberger

J. M. Nicholson, fuel conservation engineer of the Atchison, Topeka & Santa Fe, with headquarters at Topeka, Kan., has been appointed master mechanic of the Slaton division of the Panhandle & Santa Fe at Slaton, Tex., succeeding **R. G. Miller,** who has been transferred to the Pecos division of the Santa Fe at Clovis, N. M. Mr. Miller succeeds **W. W. Walker,** who resigned on November 1.

Obituary

James M. Hayes, superintendent of work equipment of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Chicago, died in a hospital at Chamberlain, S. D., on October 30 after a brief illness.

Robert Armour, consulting masonry engineer of the Canadian National, died at Toronto, Ont., recently, at the age of 80 years. Mr. Armour had been in the service of the engineering department of the Grand Trunk and the Canadian National for 60 years and in addition to the position he held at the time of his death he had been principal assistant engineer, chief assistant engineer and masonry engineer.

James B. Finley, formerly vice-president and general manager of the Southern Pacific of Mexico, who died at his home at Los Angeles, Cal., on October 25, as announced in *Railway Age* of November 1, page 966, was born at Santa Rosa, Cal., in November, 1856, and entered railway service on October 15, 1882, as a car sealer on the Pacific lines of the Southern Pacific. He then served that company successively as a car repairer and a master car repairer, and in 1907 he was appointed master car repairer of the Arizona Eastern (now part of the Southern Pacific) and the Southern Pacific of Mexico. In 1909, he became general storekeeper of the S. P. of Mexico and the Sonora, then being appointed assistant general superintendent of those roads, with headquarters at Empalme, two years later. Mr. Finley was promoted to general superintendent in 1920, being elected vice-president and general manager in March, 1922.